NAVAL AVIATION
NEWS

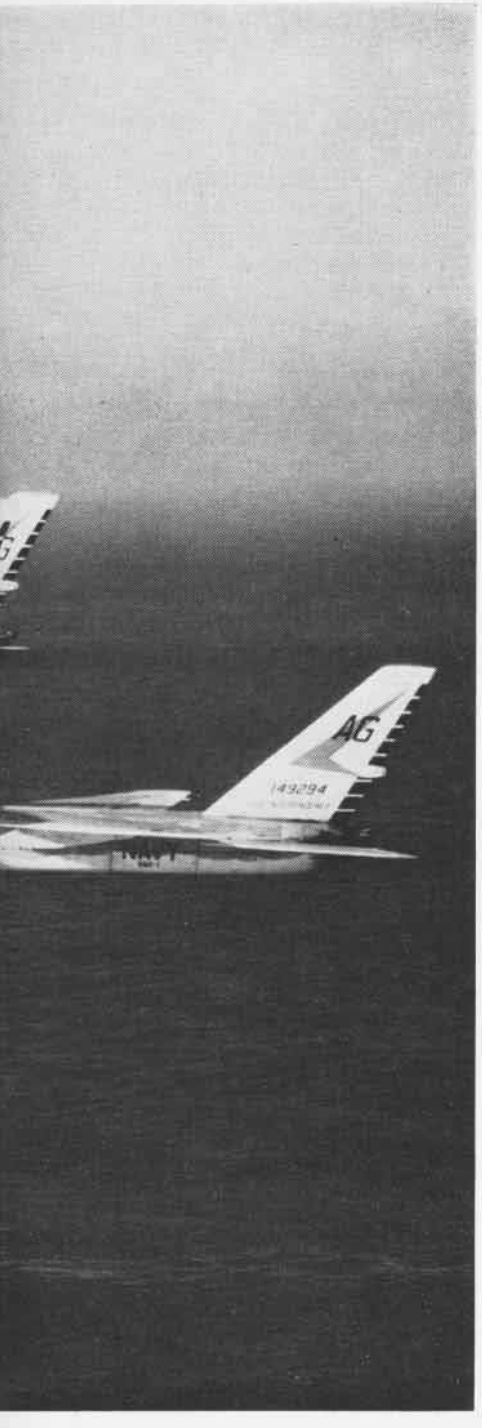
TEST FLIGHT TO THE POLE

45th Year of Publication

APRIL 1964

TOWARD MORE RELIABLE HUMANS?

Naval Aviation Safety Center, Norfolk, recently published a graph showing an approbative downward curve in the All Navy accident rate—from 2.83 accidents per 10,000 hours in 1958 to the record low rate of 1.46 in 1963. Human error-caused accidents, however, did not show comparable improvement. This disparity is the reason why safety experts are making new probes into the Human Error problem. On page 10 of this issue, we begin the first of a series on 'Preventing Human Errors;' next month: 'Prevention through the Aviator Selection Process.'



■ PICTURE CREDIT

Above, four of Heavy Attack Squadron One's A-5A Vigilantes, built by North American Aviation Corporation, approach the break to USS Independence. Flight leader of the diamond formation is LCdr. John Moore in 601; 609 is piloted by Lt. Dick Barnes; 607 by LCdr. Pat O'Gara; 611, by LCdr. Jim Bell.

NAVAL AVIATION NEWS

Selected BEST INTERNAL PERIODICAL 1963-64 by Federal Editors Assoc.

FORTY-FIFTH YEAR OF PUBLICATION APRIL 1964

■ IN THIS ISSUE

■ THE STAFF

Issuance of this periodical approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS P-35

Published monthly by Chief of Naval Operations and Bureau of Naval Weapons to disseminate data on aircraft training and operations, space technology, missile, rocket and other aviation ordnance developments, aeronautical safety, aircraft design, power plants, aircraft recognition, technical maintenance and overhaul procedures. Send mail to Naval Aviation News, OP 05A5, Navy Department, Washington 25, D.C. Office located at 3704 Main Navy Bldg.; telephone Oxford 62252 or 61755. Annual subscription rate is $2.50 check or money order ($1.00 additional for foreign mailing) made payable and sent to Superintendent of Documents, Government Printing Office, Washington 25, D.C. Single copy costs $.25.

NAVAL AVIATION NEWS

New Office in CNO Set Up

Serves as Hub of ASW Operations

The Office of Anti-Submarine Warfare Programs, Op-95, has been established within CNO. The Executive Director of Anti-Submarine Warfare Programs, ACNO (ASW), RAdm. J. N. Shaffer, heads the new department. The Plans and Programs Branch, Op-320, of the ASW Division, Op-32, has also been disestablished and its functions transferred to Adm. Shaffer's group. The changes were announced by OPNAV Notice 5430.

The mission of Op-95 is to exercise centralized supervision and coordination of all ASW planning, programming and appraising in order to insure an integrated and effective ASW effort.

Memphis' Quality Control

Will Guide Student to Right Field

Research psychologists at NATTC MEMPHIS have completed study on a program for predicting student performances in advance, particularly in technical fields. It aims to identify poor training risks among students currently in basic phases of aviation technical training. If a trainee shows more chance of success in another field than the one to which he is assigned, he will be transferred and become a better training risk.

This program is basically a quality control measure, similar to the type employed by industrial production centers. It is designed to insure that all students meet certain minimum specifications before being permitted to continue training.

Psychologist Ltjg. A. A. Longo, MSC, has examined the past performance records of 1349 students since the project began last June. He found that combinations of each student's marks in aviation familiarization and aviation fundamentals provides a gauge by which future performance in advanced schools can be predicted. "This information should be used only with other information pertinent to a student's performance," he says.

Results of the program may solve the rising attrition problem in mechanical schools. The emphasis is on salvaging students rather than on failing them.

Britannia Award is Given

VMF-334 Pilot Honored by British

Lt. R. P. S. Stone, USMC, of VMF-334, has been named winner of the 1963 Britannia Trophy by VAdm. K. J. D. Bush, Commander of the British Navy Staff in Washington, D. C.

The annual award was established by the Lord Commissioners of the Ad-

THE NAVY'S NOMAD *weather boat is now on duty in the middle of the Gulf of Mexico, radioing temperature, barometric pressure, wind speed and direction, and sea temperature with instruments powered by a small atomic generator. The NOMAD is forerunner of a world-wide system of remote, unattended weather stations. The 60-watt nuclear generator is SNAP-7D. Earlier stations were powered by batteries that must be recharged every six months. SNAP-7D is designed to produce electric power continuously for ten years without having to be recharged.*

miralty of the United Kingdom in appreciation of the assistance rendered by the U.S. Navy in training British pilots during the period 1952-56. It is presented to the Navy or Marine Corps student undergoing advanced flight training who attains the highest over-all weapons score during each calendar year. Selection is based on proficiency in bombing, aerial gunnery, rocketry, and missilry.

Lt. Stone will be presented a scroll from the British Royal Navy during a parade early this month, in which MGen. Frederick E. Leek, USMC, Wing Commanding General, will be the reviewing officer.

In addition, Lt. Stone's name will be inscribed on the Britannia Trophy, a model of the Royal Navy *Vampire* jet fighter, which is kept at the Headquarters of the Chief of Naval Air Training, at the Naval Air Station, Pensacola.

THE NEW VAL, *substantially a version of the Crusader with a new engine, was designed by Ling-Temco-Vought (NANews, March 1963, p. 3). The light attack aircraft, to be designated A-7A, will be used by the Navy and Marine Corps. Its greater payload and range capabilities will enable it to have a longer time on station in close support of troops. Slightly larger than the A-4E, VAL will be easy to maintain with ready accessibility to all equipment for servicing.*

Navy Mans LPH-4, LPH-5

Provisional Support Troops Depart

After five years serving aboard the amphibious assault ships *Boxer* (LPH-4) and *Princeton* (LPH-5), the Marines have landed. Their billets have been filled by U.S. Navy men and the Marines have been ordered to fill vacancies in the Fleet Marine Force.

In 1959, the Marines boarded the ships in numbers—ten officers and 327 enlisted, each—to activate the vertical envelopment concept. At that time, the two ships dropped their CVS designations and officially became LPH's. With the Navy short of manpower then, the Marine Corps offered to supply provisional support troops.

Only in the Engineering, Navigation, and Medical Departments were the Marines not used. They filled billets in Supply as cooks, bakers, and disbursing clerks, working side by side with their Navy counterparts. In Combat Information Center, it was not unusual to see a Marine PFC and a radar seaman working over the same plotting board. The Air Department, with the exception of the fueling division and a few Naval officers, was completely manned by men in the Corps.

The Marine Guard ran the brig, supplied orderlies and sentries, participated in ceremonies, and manned some of the gun mounts. Marine photographers and weather observers served in the Operations Department. They worked on electronics gear and even filled postal clerk billets.

On January 15, the Marines turned over their billets to Navy personnel in the *Boxer* and debarked. On January 31, they left the *Princeton*. Remaining aboard each ship is a detachment of three: an assistant air operations officer, a combat cargo officer, and his NCO assistant.

Marines in number will not long be strangers aboard these LPH's. Within several months of the exodus, Marine operational squadrons are scheduled to fly aboard the ships on deployment.

New School at Norfolk

Support Equipment Training Held

The Aircraft Maintenance Department, NAS NORFOLK, has established an Aviation Support Equipment Operation and Preventive Maintenance Training School. Establishment of the school was based on the need to decrease the number of accidents, personal injuries and property damage resulting from unfamiliar and unqualified personnel operating equipment.

Six enlisted instructors teach a total of nine courses in the two-day syllabus. Classroom training is combined with on-the-job instruction with ground support equipment. The supervisor of the program is Lt. F. H. Cohan.

LPD-3 Put in Commission

Will Land Troops by Helicopter

On February 22, Amphibious Transport Dock *LaSalle* (LPD-3) was commissioned at the Brooklyn Naval Shipyard. VAdm. John S. McCain, Jr., was the principal speaker.

Amphibious transport dock ships are designed to combine the functions of the attack transport (APA) and the attack cargo ship (AKA). The LPD will land combat-equipped troops by helicopter. Nine landing craft (LCM), preloaded with troops and equipment too heavy to be carried by helicopter, can be launched from the well that opens to the sea at the rear of the ship. A helicopter platform, built over the well, enables the LPD to carry and launch six CH-37C amphibious transport helicopters.

LaSalle is 521 feet long and has a standard displacement of 8040 tons and 13,900 tons fully loaded. She is manned by a crew of 20 officers and 460 men. She will carry 930 troops and 2000 tons of cargo. Her first commanding officer is Capt. E. H. Winslow.

GRAMPAW PETTIBONE

No Fuel—No Flame

Four A-4C drivers reported to the ready room for a night loft bombing hop at approximately 2230. The squadron was deployed at an NAAS for intensive weapons training. The flight leader briefed the hop, his third flight of the day and his sixth within 24 hours. The flight members then signed for their aircraft and proceeded to the flight line.

During preflight of his aircraft, the flight leader found that two fuel caps were not secured and questioned the plane captain. The plane captain explained that the truck had run out of fuel after pumping only 315 gallons into the aircraft and he was waiting for another refueler. The pilot checked the fuel gauge: it read 2600 pounds. He figured the 1900 pounds that had been added would give him around 4500 pounds for the flight. He decided to take the aircraft, rather than hold up the hop waiting for additional fuel.

At light off, he noted only 3200 pounds on the fuel gauge, but as the other pilots were set to go, he elected to cut the hop short but continue as briefed. The flight taxied out, took off and while in the rendezvous turn the flight leader noted his fuel aboard to be 2600 pounds. He decided he would bingo after three loft maneuvers or a low state of 1200 pounds, whichever occurred first.

For the next several minutes, the pilot was completely occupied with the loft maneuvers and the position of the other aircraft in the flight. On the sixth loft at approximately 12,300 feet and 220 knots in an inverted position, the engine unwound. Recovery was accomplished by pulling the nose to the horizon and rolling out. The pilot immediately selected emergency generator, manual fuel control and, with the throttle in the idle position, turned on the air-start switch. Re-light attempts were unsuccessful, so the throttle was brought around the horn and the air start switch turned off.

After several Mayday transmissions on guard and more air-start attempts, the pilot suddenly realized the flame-out was due to fuel exhaustion—an "0" reading on the fuel gauge immediately confirmed this.

Altitude was 8000 feet at this time. As he was over a desolate area, he prepared to eject. As the aircraft was turned toward an area considered safe for ejection, the pilot saw the runway lights of the air station. Since he was in good position for a flame-out approach and realized that this predicament was totally pilot-induced, he made the decision to attempt an approach. Completely sold on the low level capability of the seat he was riding, he elected to reserve a final decision on whether to eject or continue the approach until he was at the 90° position.

Several more attempts were made to raise the tower on guard to inform them that a flame-out approach was being made, but he couldn't get through. Passing through 5000 feet MSL, the gear was dropped and the pilot thought he saw three safe indications. Things looked good to the pilot as he passed over the threshold lights at 200 feet and 150 knots: a slight flare was commenced. As the sink rate seemed a little excessive, the flap handle was lowered in an effort to cushion the landing.

Initial touchdown felt normal, but shortly thereafter the right wing started to drop. The pilot was unable to hold the wing up and, as the wing tip contacted the runway, the aircraft porpoised again and became completely airborne. As the aircraft contacted the runway a second time, it started a severe swerve to the right. After leaving the runway and crossing a drainage ditch, it continued across several hundred yards of rough desert terrain before coming to rest against a pile of sand.

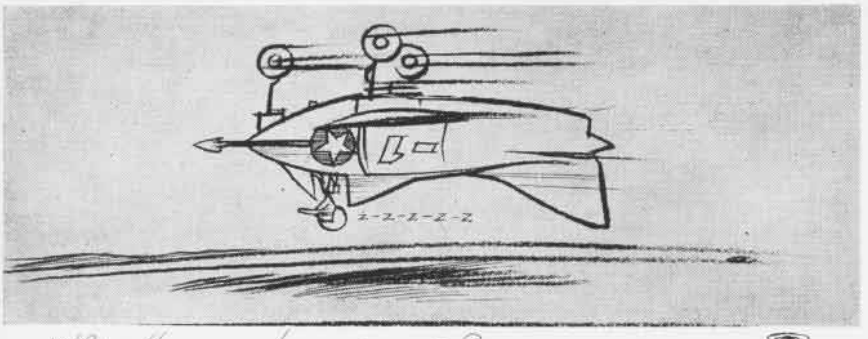
After coming to a stop, the pilot jettisoned the canopy, released his rocket jet fittings and abandoned the aircraft uninjured.

Grampaw Pettibone says:

Giminentlies! Some days you can't make a dime! Here is an experienced, well qualified flight leader charged with the responsibility of setting an example for the other lads in his flight and he accepts an aircraft with a partial load of fuel.

This conscientious gent had only four and a half hours of sleep the previous night. He had been occupied

ILLUSTRATED BY Gibson



all day with collateral duties and this was his third loft bombing hop of the day. Mental and physical fatigue probably influenced his decisions throughout the entire flight. These actions—deciding to take the aircraft with a low fuel state, forgetting his fuel state, repeated attempts to get a relight before discovering fuel starvation, a decision to attempt a night flame-out approach, not utilizing the emergency gear system after deciding to land and finally not noticing the unsafe gear indication—all combine to substantiate a fatigue cause factor in this accident.

The underlying factor associated with this accident is that the pilot accepted an aircraft short of fuel, and endeavored to complete the flight as scheduled. From that point until the little bird smashed into the desert sand, each decision became more complex and involved.

The decision to attempt a night flame-out approach in an effort to bring the aircraft back is questionable to say the least. The pilot's decision was made after due consideration of his proficiency in the aircraft, an unpopulated approach path to a 14,000 foot-runway, complete control of the aircraft, and confidence in the low altitude capability of his spring seat. Although not recommended, this particular flame-out attempt would probably have been successful had the pilot lowered the landing gear with the emergency system. Flame-out approaches should not be attempted except under the most ideal "daylight" conditions—a long enough runway in an acceptable area—and only by an experienced pilot at the proper state of proficiency.

We are all real clever and appear pretty bright when afforded the opportunity to make a wise decision based on hindsight and what might have been. I'm sure no one has said anything that this pilot hasn't repeated to himself several times since this fiasco.

Retracted Rollers

Two pilots departed an East Coast air station for a syllabus familiarization and demonstration flight in an E-1B (WF-2). It was the first E-1B flight for the pilot in the right seat and also his first flight of any type in approximately 30 days.

After takeoff the instructor pilot climbed to altitude and pointed out distinguishing landmarks in the local area. He then demonstrated the different characteristics of the aircraft in both the clean and dirty configurations. The pilot in the right seat practiced stalls, recovery, and slow flight for several minutes, then proceeded toward a military field in the local area for practice touch-and-go landings.

The instructor pilot contacted the tower and received permission for practice landings. The tower directed the pilot to plan his approach for right traffic to the duty runway and a full flap touch-and-go landing was made. The instructor-pilot demonstrated 2/3 flap landings, then informed the tower that they would depart the pattern and switch pilots.

After the pilots changed positions they returned to the field, so the pilot who was under instruction could practice a few landings. The tower cleared the pilot into a left pattern for touch-and-go landing. He shot three full flap landings and one 2/3 flap when the tower advised him to plan his next approach for right traffic to the runway due to GCA traffic.

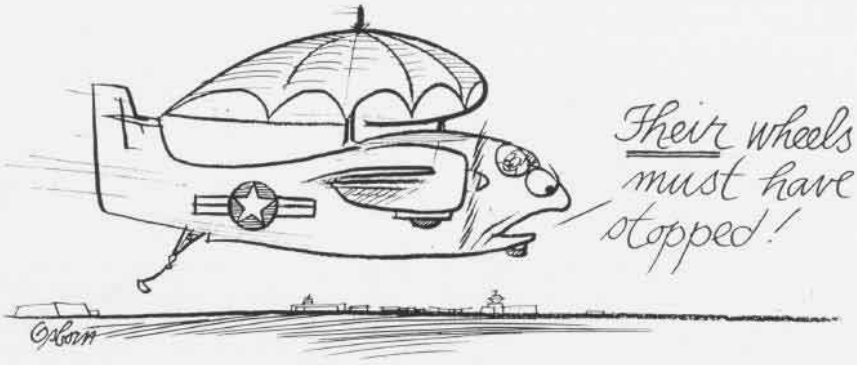
Both pilots were concerned with the GCA traffic during the approach. At the 180° position they advised the tower that gear was down. They were cleared to land. The approach was normal with good speed and lineup, but at touchdown both pilots realized the landing gear was not down. After the aircraft came to a stop, all switches were secured and the pilots evacuated.

Grampaw Pettibone says:

Now doesn't a thing like this really frost you? Here are two well-qualified and supposedly professional pilots who let an interruption in their routine get them into this embarrassing mess. The pilot in the left seat had over 3000 hours total time and over 500 hours in a similar bird. It's pretty clear that he allowed a right hand pattern and concern for other traffic to get him so thoroughly confused that he just plain forgot to put his rollers down.

It's obvious that they both failed to use the "check-off list." There is no directive that requires a wheel watch for multi-piloted aircraft, but there could very well be with any more tricks like this. It's mighty hard to figure why a guy will continue an approach when he has interrupted his routine or is overly concerned about conflicting traffic.

There's really nothin' old fashioned about taking it around—A Real Pro will. It's the guy who cons himself into complacency that sets himself up for trouble and creates work for the AZ's.



INSTITUTE PUBLISHES AVIATOR'S GUIDE

FOR THE ESTABLISHED FLYER and the neophyte considering or already in pursuit of wings of gold, *The Naval Aviator's Guide*, published by the Naval Institute, is a helpful source book of information. Written by Capt. Malcolm W. Cagle, a former fighter squadron skipper and co-author of *The Sea War in Korea*, the book presents neatly categorized data on nearly every phase of aviation in the Navy. It presents what might be called an all-encompassing "sense pamphlet" combined with chronicled statistics of pertinent interest to the flying officer.

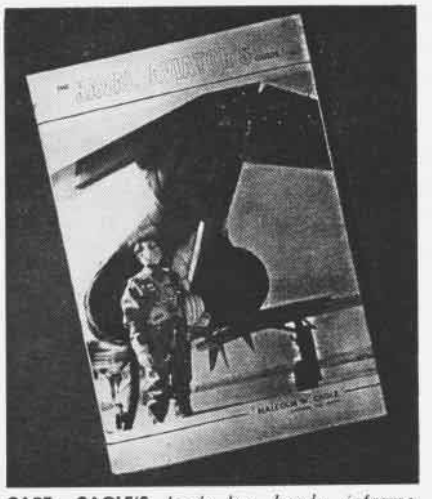
There are 12 chapters in the book which cover topics ranging from the mission of Naval Aviation through the responsibilities of a squadron duty officer. Factual data on the history of the air Navy is balanced with other areas of concern such as practical pointers on leadership, routine aboard ship and career planning information.

One chapter deals specifically with operational matters and includes dissertations on the professional attitude toward flying and toward non-operational duties of the aviator. Aviation safety, medicine and supply are extensively treated along with outlines of unit organizations from the squadron level on up to OPNAV in Washington.

Additional appendix sections contain the Naval Aviation Identification System, a list of ships and aircraft and a compilation of official world records held by Navy planes and the men who flew them. A 13-page glossary of aviation terms defines items from acceleration force to ZULU reports.

Grampaw Pettibone's right-hand pen, artist Robert Osborn, leads off each chapter with a cartoon and a wide selection of photographs contribute to the book's attractive layout.

One who has experienced a recent tour of squadron duty might initially consider the Guide a superfluous personal possession. At one time or another he has become familiar with quarterdeck etiquette, who the V-3 division is responsible to, or what life expectancy time in the water is possible without an exposure suit. Or he might wish to refresh himself with this seemingly basic information prior to returning to the Fleet next time.



CAPT. CAGLE'S *book has handy information for both the new and seasoned pilots.*

Even while engaged in flying duty, operational or otherwise, a conglomeration of questions, the answers to which are on the tip of the tongue but still evade the mind, can be answered expeditiously with the flip of a couple of pages. For example, what is the exact definition of an "official business flight?" How long is the normal tour of overseas duty in Hawaii and what kind of duty is expected after rotation? What are the requirements for securing a standard instrument card? What kind of ship is an AVT?

The parents, wife or girl friend of a Naval Aviator, in all probability, will not be concerned with the nicknames of fighter squadrons in the Pacific Fleet. They can, however, skim through the Guide and get a realistic look at what the pilot's environs are like and how he fits into the multi-segmented mosaic that is known as Naval Aviation.

VAdm. W. A. Schoech, now Chief of Naval Material, writes in the foreword that "Regardless of precommissioning education, many things that the new aviation officer must learn about his profession cannot be taught in school. . . . The learning job can be made easier by compiling the collective experience of those who have gone before, and by publishing in a single volume much of the information." Further, he stated, it "offers comprehensive coverage of the subject."

AEW Crew Wins Award

Honored for Third Consecutive Time

Airborne Early Warning Barrier Squadron Flight Crew 12 has been awarded the "Outstanding Crew" award for the third consecutive time.

The award was presented to Cdr. L. C. "Joe" Schmidt and his crew of 20 by RAdm. Clifford H. Duerfeldt, Commander Barrier Force Pacific. The period covered was from July 1 through December 31, 1963. The award is given twice yearly.

Points covered in making the evaluation include radar effectiveness, barrier performance, communication effectiveness, electronic countermeasures, navigator's charts and records, personal conduct of crew and operational readiness and standardization inspections.

LPH-6 Is Decommissioned

Thetis Bay Joins the Reserve Fleet

A Navy ship instrumental in revolutionizing amphibious warfare was decommissioned in January and joined the reserve Fleet.

The amphibious assault ship, USS *Thetis Bay* (LPH-6), named for a bay in Alaska, made her last run when she departed Norfolk for Philadelphia on January 5, 1964.

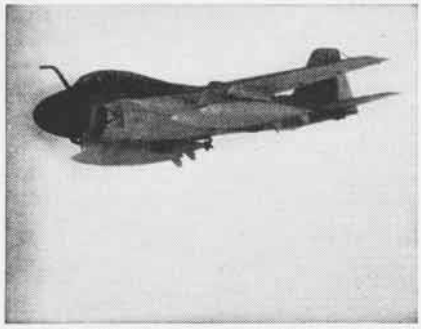
She was a WW II "jeep" carrier sliding down the builder's way at Vancouver, Wash., in April 1944. As CVE-90, she served the remainder of the war as an aircraft transport. After VJ Day, she transported troops and equipment to the United States from the battle area. Then the "Gay Ninety" joined the Pacific Reserve Fleet.

Thetis Bay came out of retirement to become the world's first assault helicopter carrier. Her mission was to evaluate and test the concept of vertical envelopment. In the course of accomplishing this mission, catapults, arresting gear and centerline elevators were removed. A new 18-ton elevator was installed. When operations proved the value of vertical envelopment, a new class of ship was put on the drawing board.

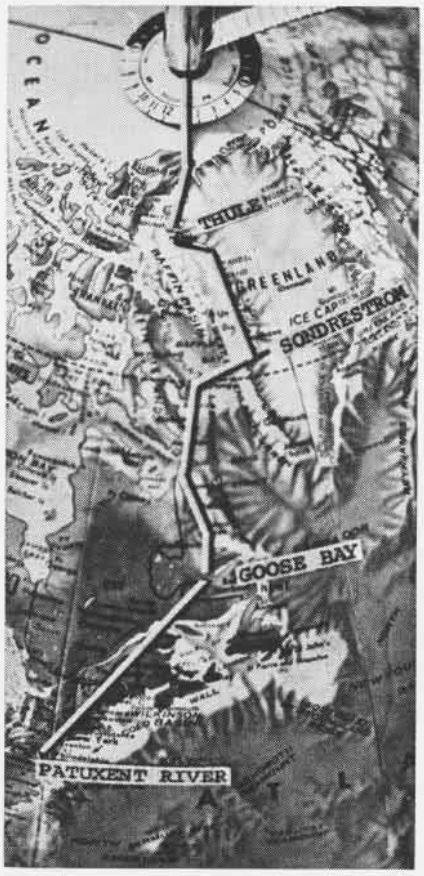
The accomplishments of *Thetis Bay* are many. She recently completed her 36,000th accident-free helicopter landing. She won the CNO Aviation Safety Award on two occasions. She has steamed the equivalent of eight times around the earth at the equator.

FROM PATUXENT TO THE POLE

By Capt. D. L. Harvey, USMC,
and Lt. J. G. Griffith, USN
NATC, Patuxent River



A-6A INTRUDER *is en route to Thule AFB after completing test at Sondrestrom, Greenland.*



ON A WORLD GLOBE, *the long trip from Patuxent River to the North Pole is depicted.*

P-3 ORION, *photographed from Intruder, was always a welcome sight to the lonely A-6A.*

THE ARCTIC CHILL of September in Greenland was contrasted with the warmth of autumn in Maryland when a team of Naval Air Test Center project officers, engineers, and support personnel took the A-6A *Intruder* to the North Pole.

The trip was conducted to test and verify the capability and accuracies of the A-6A inertial navigation system in the polar regions. In lower latitudes, the inertial platform constantly retains orientation to true north, but within the arctic the system must employ a grid reference for navigation. In all modes of operation, however, the platform must first be able to determine the true north alignments, using accelerometers, gyros, and servos which sense earth movement and correct for constant rotation about the earth's axis. In this alignment process, the further north that the alignment is attempted, the more critical are the corrections for the earth's rate of rotation. This condition was investigated by stepping northward from Patuxent to the Pole with intermediate tests and staging at Goose Air Base, Labrador; Sondrestrom, Greenland; and Thule Air Base, Greenland.

From the Weapons Systems Test Division of NATC, Capt. Donald L. Harvey, USMC, A-6A project pilot, flew the *Intruder* on the polar test, with Lt. John G. Griffith, USN, project B/N, flying as bombardier/navigator. Other NATC personnel on the polar mission included Cdr. E. A. McCallum, USN, A-6A program manager and pilot, Mr. Charles Farmer, project engineer, and Mr. Varner Henderson, inertial systems engineer. In support of the A-6A, Lt. Donald Lilienthal, USN, and Lt. Gordon Petri, USN, piloted a P-3A *Orion* for both logistic support and chase-plane, while Ltjg. Thomas Amantea, on loan from Project *Magnet,* handled the P-3A navigation duties.

The Navy team was augmented by Grumman Aircraft Engineering Corporation personnel headed by Mr. John Danner and Mr. Edward Smith. These personnel provided technical support for the evaluation of the A-6A inertial navigation system as a part of the Board of Inspection and Survey trials of the *Intruder.*

Personnel received a thorough mission briefing and were issued arctic survival equipment while the *Intruder* was being prepared for the 10-day trip. Survival lectures, presented by Weapons Systems Test survival personnel, described the equipment that was especially packaged for use on this project. The P-3A's bomb bay was loaded with a survival package which could be dropped to the A-6A crew should the need arise.

A description of personal experiences by Lt. "Pete" Petri, USN, the pilot of the Arctic Basin II Project (*Naval Aviation News*, October 1963, p. 10) was helpful for planning purposes and interesting to all team members who were going north for the first time.

The P-3A *Orion* was to serve as both a chase and support airplane. Its ability to match the speed and altitude cruise performance of the A-6A and wealth of navigation and communication equipments made the P-3A a perfect teammate for both project test flights and on-the-scene rescue and assistance.

Early in the planning stage, it was determined that existing radio-navigational aids installed in the A-6A would suffice for terminal navigation, but long expanses between airfields required a backup low-frequency direction-finding equipment. To provide this capability, an AN/ARN-6 radio compass was installed in an externally-carried Douglas "NavPac" store. After this installation and flight tests to verify proper operation of the inertial navigation system, the team departed NATC PATUXENT.

The route to Goose Bay, Labrador, was well-defined by airways but marked by bad weather. Shortly after takeoff, an electrical transient surged

through the inertial system rendering it useless because the true north orientation and level were lost. However, an in-flight alignment of the inertial system was successfully completed and the flight continued north.

Goose Air Base is located at the southern tip of Goose Bay, Labrador, latitude 61°31′ north. Two nights were required to complete the ground alignment testing phase at this latitude. Meanwhile, personnel used this opportunity to draw additional cold weather clothing—such as fur-lined parkas and thermal flight boots—from the Air Force.

Departing Goose and continuing northward along the Canadian coastline, the team watched the icebergs increase in size and number with the increasing latitude. Over the Davis Strait, before making landfall at Holsteinborg, Greenland, the crews were first exposed to the cold vastness of the arctic waste that was to dominate the remainder of the flights.

Suitable airfield locations on Greenland are at a premium, since nearly all of the island is glacier-covered mountains. Only at the coastline does the glacier end in a narrow strip of land which lends itself to habitation and use by man. However, even here, ground that is level or of a texture that can be leveled is rare because of the solid rock character of the terrain. One such nearly level (0.71% upslope) site is at Sondrestrom. The airfield is bordered on the north by a 1600-foot mountain cliff. The approach to the runway follows the narrow fjord inland between mountains; takeoffs and landings are made in opposite directions because the mountains rim the airfield.

Under Danish control, Sondrestrom is now used as a stopover for airliners en route from Copenhagen to California. The air base was built during WW II to serve as a refueling station for aircraft being ferried to Europe, but it now serves primarily as a base for search and rescue planes and a resupply depot for outlying camps.

At Sondrestrom, latitude 67°00′ north, just within the Arctic Circle, the real test of the inertial navigation system began. Theoretical calculations, performed in sunny California during development of the inertial system, were now to be verified. Ground tests proved that alignments within the arctic were possible. After these ground tests, successful and accurate low altitude navigational flights were conducted along the Greenland coast. The next step was obvious—continue northward to the next, and the northernmost, airfield at Thule.

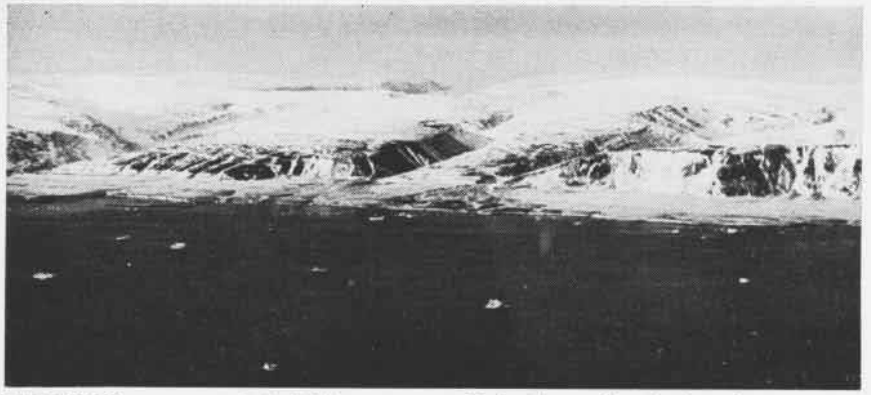
A coastal flight was planned to Thule, 580 nautical miles northward. Flight clearances were quite different from those issued in the United States where each and every airplane is under positive control and its route, airspeed, and altitude carefully monitored. In these remote airlanes, the clearance was as follows: "Fly direct from Sondrestrom to Thule to cruise within 30 nautical miles of the route centerline at any altitude from the surface to 30,000 feet," giving the pilot latitude.

Immediately upon arrival at Thule, latitude 76°30′ north, preliminary alignments were attempted to determine the feasibility for conducting tests at this northernmost site. Initial alignment attempts were successful. The reliable *Orion*, now in its role of support aircraft, after having just completed the much-appreciated mission of plane guard, returned to Sondrestrom to ferry the support personnel to Thule. On this return flight, the support personnel were presented a spectacular nighttime display of "northern lights."

Flights from this northern base provided a view of unusual landscape in addition to useful navigational data. Huge glacier ice flows, formidable snow-covered mountains, and deep-

INTRUDER PROVIDES *backdrop for the group from NATC Patuxent River who participated in the test of A-6A's polar navigation capability. The photo was taken at Sondrestrom after Pole flight.*

THIS IS *Intruder's navigation panel read-out on flight of attack plane over the North Pole.*



THE RUGGED, *snow-covered, forbidding coast, near Holsteinborg, Greenland, is characteristic of the land in the Arctic Circle. This was a view to be repeated again and again on the A-6's flight.*

blue water, crowded with icebergs, produced a scene of grandeur that awed the flight crews and caused each one to recheck his survival equipment and procedures. Navigational results were encouraging. Satisfactory flight test results in the Thule area left only one capability of the system to be determined—operation at latitude 90°00′ north, the North Pole.

For the final northward flight, the weather held fair at Thule, but en route weather to Alert, the northernmost navigation checkpoint, was forecast to be broken to overcast. From that point on to the Pole, the cloud coverage was unpredictable, but the A-6A and its mate, the P-3A, would be at 30,000 feet, an altitude to which clouds rarely rise in the Polar region.

With the inertial navigation system operating satisfactorily, airplanes functioning properly, and the weather allowing visual identification of the checkpoints en route, the final decision was made at Alert to continue the 450 nautical miles to the Pole. Over Alert, latitude 82°30′ north, the navigational accuracy was recorded and updated. The P-3A made radio contact with the men stationed at that remote camp for a final position report before venturing over the Polar ice cap.

From Alert, the heading was due north. The one hour and 15 minute trip to 90° north provided the flight crews only brief glimpses of the ice cap through breaks in the cloud layer below. Slowly the navigation readout of the A-6A inertial system increased to its limit, latitude 90°00′ north; the *Intruder* had successfully navigated to the North Pole. After the P-3A navigator, Ltjg. Amantea, verified polar passage—and a four-minute circle around the world—the airplanes turned to retrace the path back to Alert.

THE FROZEN *still beauty of the far north was captured in this picture taken at high noon in September when the sun rose only a few degrees above the horizon at the northern latitudes.*

Using the sun, which was only a few degrees above the horizon, and the pilot's optical gunsight to obtain celestial heading checks, the A-6A continued to navigate inertially until land was sighted. The snow-covered mountains of Canada and Greenland appeared less formidable when the *Intruder* was heading southward.

After establishing radio contact with Thule, the two airplanes separated for individual instrument approaches. The weather had deteriorated at Thule since the flight had begun five hours earlier. Now, low clouds and snow were restricting visibility. The airfield was finally sighted one mile before touchdown and landing was accomplished. The 1700-nautical mile round trip to the North Pole was complete.

However, there still remained other tests to determine the limits of other navigational modes. Two additional flight tests of these modes were conducted at Thule, the second flight terminating at Sondrestrom. After an overnight stay, the long trip back to Patuxent was made in a single day, stopping at Goose Bay only long enough to refuel the airplane and return the previously checked out arctic clothing. Navigational accuracy was carefully recorded on the southward flights to verify system accuracy and complete the Polar evaluation.

After 10 days and 13 project flights, the assignment to evaluate the Polar capabilities and limitations of the A-6A *Intruder's* inertial navigation system was completed by the men who went from Patuxent to the Pole.

To the crew that flew the *Intruder* and supported it on this flight, the mission became something of an adventure, smacking a bit of the early days of Arctic exploration. The awesome beauty of the area tended to intensify the feeling. But the information they came back with is as solid as the ice the plane flew over. Its full value is not yet realized, but is important.

Preventing Human Errors

WHAT CAUSES MISTAKES

First Article in a Series

"Unless we make a concerted attack on the human error factor, 60 per cent—three out of every five—of our future accidents still will be caused by the human factor."

With this statement in reference to the Naval Aviation historical summary, Cdr. W. H. Hile, Naval Aviation Safety Center Records Department, touched off a conference of 100 safety experts from the Navy, Army, Air Force and U. S. contractors at Virginia Beach, late in January.

Third in a series of Aviation Contractors Safety Representatives meetings, the conference dealt exclusively with the human error in aviation.

Cdr. Hile's statistical projection into the future was based on evidence that Naval Aviation's accident rate has been declining, but the human error rate has not been keeping pace with the decline.

"The fact remains that the human factor accidents are unacceptably disproportionate to the whole."

The term, human error, implies both pilot errors and those of other personnel whose actions have a bearing on the success or failure of a flight.

Human error is receiving more attention on the part of safety engineers as the reliability of aircraft parts increases.

While much of the contractors' conference was concerned with the broad categories of human error associated with (1) Design/production of aircraft, (2) Operations, and (3) Maintenance, the speakers concentrated on the "individual" and his personal concern for safety.

Following is an excerpt from one of the major papers presented to the safety conference by representatives of civilian contractors.

The paper, given by Mr. A. L. Steinberg, an associate engineer, Bio-Factors Section, Douglas Aircraft Company, Inc., and co-written by W. F. Childs, discussed the human error problem "from the point of view of the causative factors which precipitate unreliable human performance."

Mr. Steinberg is a graduate in psychology from Arizona State College and is completing his Masters degree at Los Angeles State College.

IF WE ACCEPT the philosophy of the 18th Century poet that "to err is human, to forgive is divine," we must agree that humans will err. However, can we then assume that system users will have a divine forgiveness? The answer to this must be a definite NO.

The results of several surveys concerning the nature of missile system malfunctions indicate that the cause of these failures could be attributed to human error 20 to 50 per cent of the time. Such evidence clearly shows that possible error-inducing situations can no longer be traded off because of cost, time, previous experiences, etc., nor can they be "forgiven." If system objectives are to be reached, almost perfect over-all reliability must be achieved.

Usually, human error is discussed in terms of (1) the results of the error, (2) the situation during which the error occurred, and (3) the personnel involved. However, the causative factors that precipitated the error are usually overlooked. These elusive factors will be examined under the broad categories of "psychological" and "environmental."

Psychological Factors

Let us examine how motivation affects behavior by citing an example. In order to increase production, workers are offered a cash bonus for every item they produce over a certain base quantity. Instantly, output increases significantly. The actions of both the employer and employee were straightforward. The desire to fulfill their basic needs of self-preservation (food, water, etc.) and security, through the instrument of increased wages, motivated them to strive for greater output.

However, when more than the basic needs of an individual are considered, the subject of motivation becomes much more complex. Take the case of a pilot receiving flight pay who likes to fly, but who is taken off flying status and reassigned to a remote geographic location as a missile launch officer. He is pushed into a hole for 12 hours at a time, given "busy" work, separated from his family, and suffers a significant loss of income. In this instance, the effects of the loss of financial security and self satisfaction that were derived from flying, the isolation, the boredom and the social pressures that result from more than usual family separation and near-rural living, may all operate negatively on the individual's motivation necessary to perform reliably over an extended period of time. Therefore, it is not surprising that during a recent operational exercise, it was reported that a launch officer attempted to insert the wrong key (out of two possible keys) into his console. He had, perhaps, other things on his mind.

In attempting to state the cause of such an error, the usual explanation might be "failure to follow prescribed procedures." But this actually provides no useful information other than that the error is probably attributable to the human operator interacting with a piece of hardware, rather than to the hardware itself. To prevent the occurrence of this and similar cases of human error, causative factors that precipitated human error must be identified. In this case we have implied that the basic causal factor of the procedural error was due to a lack of motivation brought about by the factors previously noted. Because of the complexity of this problem, a practical solution is yet to be achieved. However, when a solution is reached, it will be because the proper causative factors were examined.

A recent analysis of human error for one R&D system clearly showed that the number of human-initiated manufacturing errors exceeded human-initiated field station errors by two to one. This significant difference can be attributed, in part, to the different levels of motivation. That is, there seems to

AT AVIATION CONTRACTORS' *Safety Representative Conference, RAdm. Edward C. Outlaw, Commander, U.S. Naval Aviation Safety Center (second from left), discusses agenda items with Mr. Jerome Lederer, Director, Flight Safety Foundation, Inc. (left), Mr. Reeves Johnson Commissioner of Safety, Virginia Beach, Va., where conference was held, and Mr. A. L. Steinberg, Douglas Aircraft Corporation (right). Mr. Johnson welcomes group of nearly 125 to the resort city.*

be a direct relationship between the motivation for reliable performance and the individual's involvement with the total system.

Let us take this hypothesis one step further. Let us attempt to explain the difference in levels of motivation between ground crews and air crews by introducing two types of personnel whose level of motivation for reliable performance differs as a result of a requirement for personal safety. The "active" operator—for example, a pilot or astronaut—will perform the tasks required of him more reliably over a longer period of time because *his life* depends upon this reliable performance. On the other hand, the "passive" operator (maintenance personnel, etc.) is not motivated as highly toward reliable performance because his self-preservation is not at stake to the same degree that the active operator's is.

If we accept the above hypothesis as valid, we must then seek some explanation for the all too frequent occurrence of errors involving the "active" operator. Certainly no "normal" person knowingly wants to commit an error that will endanger his or another person's life. Yet, time after time, errors are committed that cause or contribute to accidents resulting in fatalities or severe equipment damage. One of the prime factors that contributes to such errors is what is frequently referred to as *complacency.*

Complacency is used here to denote a person's satisfaction with his own ability or the ability of others. This could result in an error of omission or negligence because a person took for granted the procedures necessary to accomplish a task had been carried out. Take the hypothetical case of the pilot who departs on a routine flight without the letdown plate for his destination, inasmuch as he was satisfied in his weather briefing that it would be VFR upon his arrival. Of course, weathermen are never wrong! But just suppose this one was.

Consider also the case of the pilot who had landed at his intended destination just a couple of weeks ago, and therefore doesn't bother to check the NOTAMS (notices to airmen). When he arrives over his destination, which is IFR, at night, he finds the approach lighting is out, has been for a week and a half. This is complacency. In both cases, the pilots have satisfied themselves (taken for granted) that they had sufficiently prepared for their flights, when in actuality they were relying on someone else's judgment (or opinion), or their previous experience, instead of accomplishing the proper task themselves.

Complacency usually does not become a factor in errors until the individual accumulates enough experience to get into a rut. That is, "the weatherman is always right," or the "maintenance man always checks that item so I don't have to bother." Note the key word ALWAYS. In other words, the possibility of complacency being a factor in unreliable performance increases as experience in a situation increases and a routine is established, even if the performance level has been consistently high.

Environmental Factors

So far we have attempted to show that man is his own worst enemy when it comes to the cause of human-initiated errors. Assuming this to be true, let us examine the environment in which he operates to see if there is some way we can help him to guard against himself. After all, he is only human. In other words, how can we reduce human error if we make MAN the "dependent variable" and the environment the "independent variable?" On the premise that man is not to blame, we must then ask what facets of the environment could have caused him to commit an error.

Perhaps one of the greatest obstacles to a more effective human error reduction program is the general acceptance of Murphy's Law: "If a part can be installed incorrectly, eventually, someone will do it that way." [A recent article] cited the improper connection of hydraulic and pneumatic lines. The situation, if unaltered, just begs the technician (especially under time pressure) to install the lines improperly because of the side-by-side, unmarked, same-size connectors. However, this error is preventable and the prevention does not remain the responsibility of the technician. How? By a design change that would include different sized connectors and/or easily visible markings on the connectors. In effect, this would change the environment within which the personnel concerned must operate.

The point here is that such an error should not merely be written off as a "Murphy," but should be extensively investigated in order to find the causative factors involved. Then the necessary action should be taken to have all such similar error-inducing situations corrected. Here the cost of the error is far greater than inconvenience; it could include the price of an aircraft, or even a few lives. It should be noted that other possible causative factors, such as supervision, training, manuals and checklists, manning and scheduling, should be investigated also.

Causative factors here have been treated as though they were absolute, single causes of an error. Unfortunately, in real life events do not neces-

sarily occur with such black and white definition. Instead, they are frequently the result of two or more independent causative factors acting simultaneously or in sequence to precipitate an error.

As an initial step in the implementation of a human error reduction system, an appropriate data collection vehicle is required. [Editor's note: The speaker described a suggested form called a Human Error Analysis Record.] HEAR has been keyed to deal primarily with environmental factors.

Why are we introducing a suggested method of recording human error data which is environmentally oriented? Because the psychological factors involved interact with each other to make the task of isolating them difficult, if not impossible. On the other hand, the environmental factors can be identified more easily and corrective action applied to bring about a higher over-all system reliability NOW. We can redesign hardware and alter the environment; we cannot, as yet, redesign man.

A Case in Point

FLIGHT SURGEON ON USS ORISKANY

ONE MAN who must clearly understand the human factor in preventing accidents in the jet age is the flight surgeon. Part of his mission is described in BuMed's *Manual of the Medical Department:* "The physical fitness of all flying personnel attached to the command and their physical and psychological readiness for duty must be his concern."

LCdr. Andrew W. Stevenson, MC, aboard the USS *Oriskany* (CVS-34), for example, is directly concerned with both psychological and environmental human factors. He is trained by background and experience for both tasks. Not only is he a flight surgeon, he is also a carrier-qualified jet pilot.

Between *Oriskany's* well equipped sick bay and her flight deck, Dr. Stevenson is a busy man. The carrier has more than 70 qualified pilots.

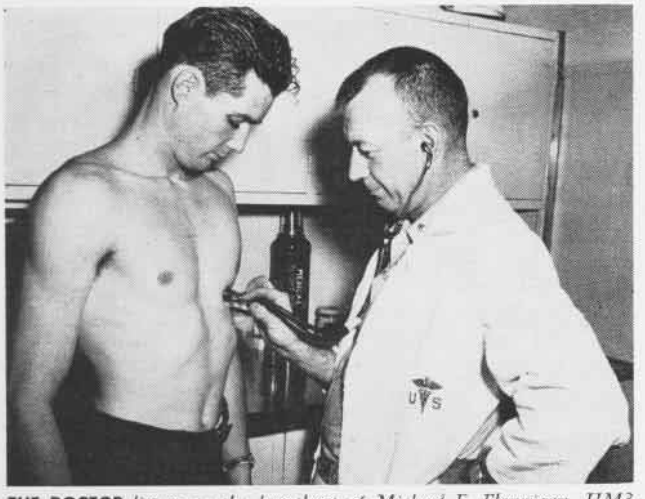
Dr. Stevenson is the one who decides whether a pilot is physically qualified to fly. Here the human factor is paramount. If a pilot leaves the deck feeling unwell, he may never complete his training mission. It is Dr. Stevenson's responsibility to insure that this does not happen.

FLIGHT SURGEON *Stevenson clambers aboard his F-8 before launch from Oriskany deck.*

Graduated from flight training in 1944, Stevenson flew in WW II. He took his medical training after the war and returned to active duty in 1953.

As an aviator/flight surgeon, he played an important part in creating a new environment for pilots and astronauts at high altitude. Serving with VX-4 in 1959-62, he flew as a pilot to test the full pressure suit at high altitudes in F-8 *Crusaders* and later in the F-4B *Phantom II.* These tests helped develop the space environment suit later used by astronauts.

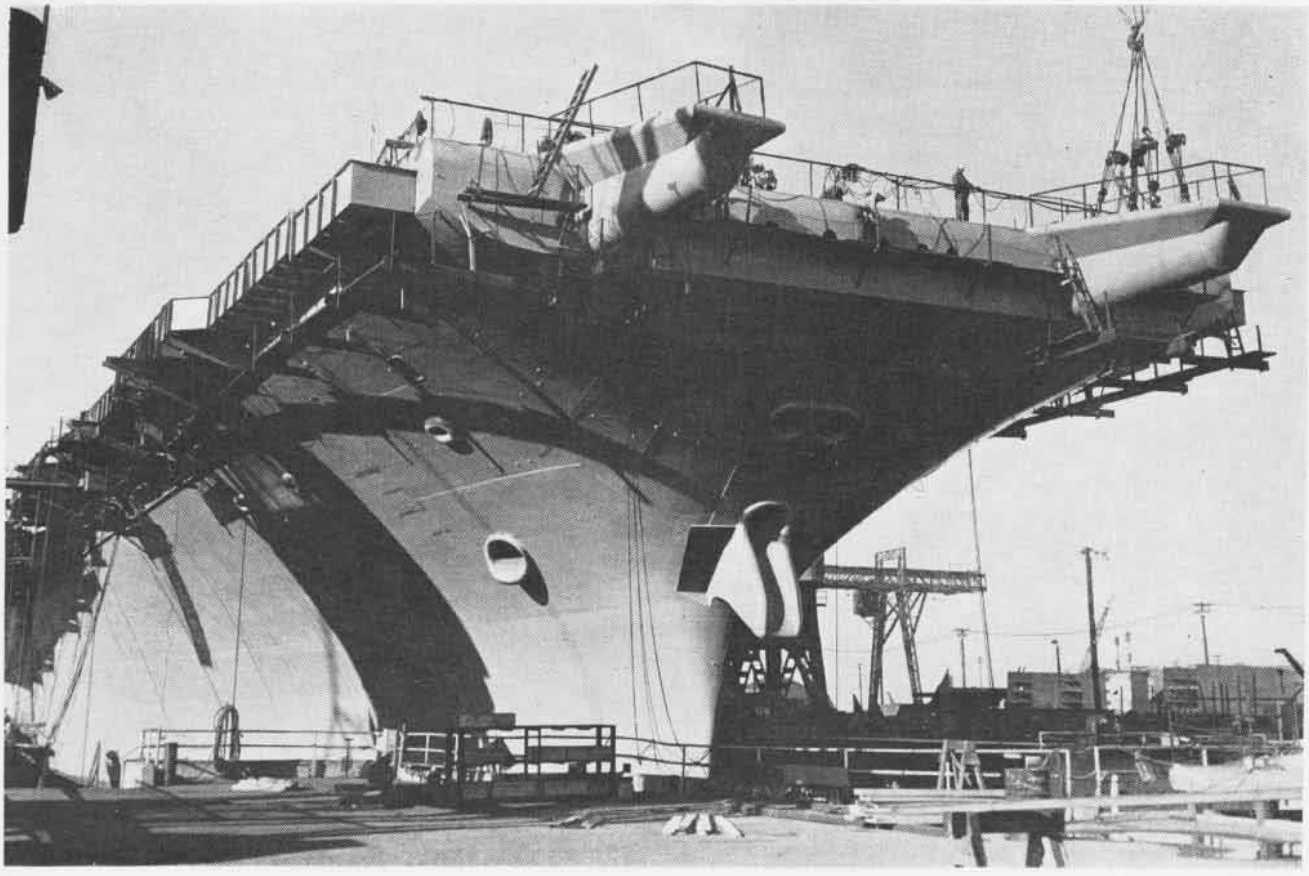
Dr. Stevenson has a total of over 3300 flight hours. He is still flying 10-15 hours per month, keeping up with current problems and tactics.



THE DOCTOR *listens to the heartbeat of Michael E. Flannigan, HM3, as part of his work to insure the physical fitness of men on Oriskany.*

LCDR. STEVENSON, *senior medical officer aboard Big O, administers a vision test to one of over 3000 men served by Medical Department.*

USS AMERICA, CVA-66, LAUNCHED



CARRIER FACTS

Navy designation	CVA-66
Type of vessel	Attack Aircraft Carrier
Propulsion	Conventional
Horsepower	Over 200,000
Speed	Over 30 knots
Length over-all	1047½ feet
Length between perpendiculars	990 feet
Depth, molded to flight deck at centerline	97'4"
Contract date	November 25, 1960
Keel laid	January 1, 1961
Christening	February 1, 1964
Delivery	Early 1965
Area of flight deck	4.57 acres
Displacement at load draft in long tons	77,600
Number of crew (including air group)	4,965

MRS. DAVID L. McDONALD, *wife of the Chief of Naval Operations, christened the carrier.*

WASTE, OH! WAIST

The following article first appeared in December 1962 in the "Cag Rag" a daily publication sponsored by Commander Air Group (Wing) Eight for all hands aboard the USS Forrestal. *Lt. Pursch, author of the piece and a flight surgeon, is currently assigned to the Department of Psychiatry, Bethesda Naval Hospital.*

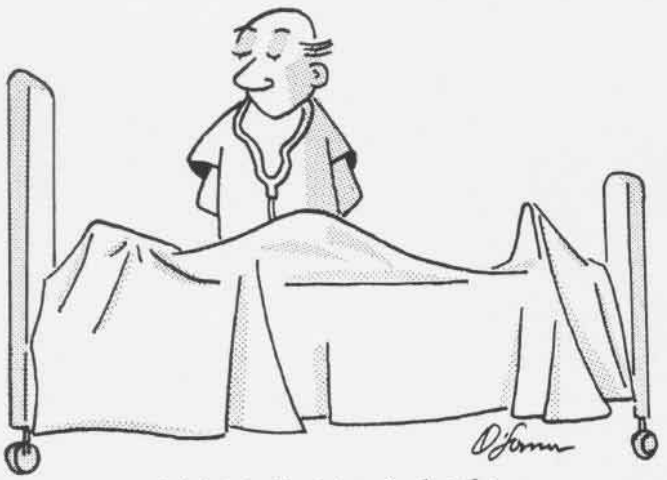
By Lt. Joseph Pursch, MC, USN

WHY SHOULD ONE WANT TO REduce? Aside from avoiding eventual dismissal from the Navy, or presenting a better appearance, there are medical and sometimes economic reasons. The list of fatal diseases which have a higher incidence in obese than in slender individuals is a mile long. Some of the better known ones are atherosclerosis, heart disease, diabetes, high blood pressure, arthritis, gall bladder stones and cirrhosis of the liver. A fat patient undergoing surgery or recovering from an injury is a poor risk. Of the leading causes of death, the only one *not* associated with obesity is suicide.

Obesity is a form of malnutrition (*mal*—from Latin, a prefix meaning "bad, wrong, ill") characterized by excessive fat deposits. With rare exceptions, it is a disorder of prosperity and/or faulty eating habits.

People who are obese because of "gland trouble" are so rare that they are medical curiosities. Every medical school maintains liaison with one or two of them and treats them free of charge for a lifetime in order to show them yearly to each successive class of medical students. "Gland trouble obesity" is a serious disease and fraught with many troublesome features, so that the obesity part is the least worry of the patient or the doctor.

In general, fat people are fat because they have eaten too much and taken in too many calories, usually for a long time. Expressed as an equation you can say that: *food intake* divided by *activity = total body weight.* Food intake is everything you eat and drink. Activity is everything you do. The total body weight is what the scale tells you when you stand on it. Obesity is not an hereditary, endocrine, or metabolic disease. It is a result of sociological or psychological factors—your habits.



'A fat patient is a bad risk.'

The fat lady who says she eats like a canary is often sincere and telling the truth, but neglecting to mention that she used to eat like a vulture. Once she is fat, she needs only a normal intake of food to stay fat. Also, like a bird, she eats small amounts—all day long. She skips eggs for breakfast then snacks at 10:00 A.M., and later at the department store lunch counter; still later when the girls drop in for coffee. Too, she will grab a "little something" when the kids come home from school; when the husband returns from work; while watching TV and before going to bed. She may not eat very much in terms of volume. In fact, she probably eats less than you do, if you are trim, in a 24-hour period. But she eats the wrong things: not much protein, but lots of carbohydrate and fat. She lives on cookies, doughnuts, rolls, jam, toast, candies, sugar and cream in her coffee, pastries and peanut butter sandwiches.

She is secretly unhappy about her figure. Her friends openly ridicule her, and her husband has hinted about her "bygone slender days." But she finds consolation in the fact that in her case it is hereditary. There is nothing she can do about it. Everyone in her family is on the heavy side. The actual reason for this is sociological or environmental. They are all fond of the same things and have similar eating habits since they were brought up at the same table. Or she may feel sorry for herself because her doctor suggested that she had an "underactive thyroid," in short, "gland trouble." She doesn't know that if her thyroid were underactive enough to cause clinical symptoms, she would have a water-logged face, puffy eyelids and many other serious physiological problems—but no fat on the thighs, hips, belly and posterior.

Of all the disorders confronting physicians, obesity carries one of the highest potential cure rates. Yet the relapse rate among people who begin reducing is higher than that among

'Secretly unhappy about her figure.'

Illustrated by Lt. Neil F. O'Connor

narcotics addicts who have "taken the cure." In this day of medical miracles and antibiotics, the pattern of examination, diagnosis, prescription and recovery is looked upon as the solution to all ailments. The physician does everything for the patient. The patient does nothing for himself—except pay the physician. Unfortunately, obesity cannot be treated that way, although quacks all over the world come up with a new scheme every day. All that the doctor can do is to re-educate the obese patient as regards his eating habits and follow him along with moral support until the patient can be on his own. He has to reduce his caloric intake.

Anyone who *has* to do it *can* do it. People who are hospitalized on controlled diets *always* lose weight. Female Hollywood sex bombs never lose their careers on account of obesity—because they would no longer make all

'The pleasures of eating don't have to be eliminated.'

'He has to reduce his caloric intake.'

that beautiful money. Nor do aviators lose their wings permanently; the love of flying or the loss of $200 monthly is enough motivation. The unfortunate people are housewives and others who don't have such compelling reasons.

Almost everybody in this world enjoys eating. The roots of it are in infancy when practically all of life's comfort and security mean being suckled and fed; in childhood when a "good boy" is rewarded with sweets and special treats, and in the teens when much eating is done out of boredom, frustration and for unfulfilled desires.

To lose excess weight and remain trim, the pleasures of eating don't have to be eliminated, or even sharply curtailed. A person must re-educate himself regarding his eating habits. Some people eliminate two meals a day then overeat on the remaining one. They add to their unhappiness by ruminating over hunger pangs all day. Others memorize the caloric values of different foods and weigh every crumb on an apothecary scale. But they snitch food because they are always hungry.

A simple but not easy formula is to lay off or cut down on all "man-made foods." Anyone can completely satisfy his hunger at every meal (three a day) by eating all the meat, vegetables and fruits he wants to. The only two exceptions are potatoes and peanuts. If you eat two pieces of meat, two helpings of vegetables and two fruit deserts in one meal, you will not gain weight. If you eat one piece of meat, two hot rolls (man-made), butter (man-made), gravy (man-made), ice cream (man-made) and one piece of pie (man-made), you *will* gain weight unless you are a growing boy or do hard manual labor.

People often ask for drugs to help them along. Dexamyl is all right for a few weeks because it spoils your appetite. But soon you eat as you did before, only now you eat the capsules too, and they help you to stay awake for a late snack. Dexamyl is like a cat shot. During the stroke, you must develop new and proper eating habits, then fly on your own power.

Chief A who runs the aviation medicine room on the *Forrestal* took Dexamyl for two weeks in August 1962 and changed his eating habits. He was 5′ 8″ tall and tortured the scales at 246 pounds. Now he is still 5′ 8″ tall but he weighs 191 pounds. He doesn't feel sluggish anymore and happily skips around the room when people come in to use the scale. The only trouble he had was to have all his uniforms altered to fit his new profile. But the capable *Forrestal* tailors did this free of charge so he doesn't even complain about that.

Chief B, who keeps the CAG office running smoothly, was admitted to sick bay in February 1962. He tipped the scales at 188 pounds. Because of an illness, he was given soup only, then placed on a low calorie diet. Six months later, and after having changed his eating habits, he too, saw the tailors. He had lost 32 pounds. Now he eats three times a day and never starves.

Nothing worth while comes easily. The only way to lose excess fat is to eat fewer calories—and "man-made foods" are the chief offenders. If there were a potion, a pill, or an easy way, the doctors would know it. As long as you see fat, bald doctors in this world, there is no easy way to lose weight or to grow hair on a bald head. Don't just clean up your plate because you are basically neat or because you can't stand to see all that good food go to waste — because to WASTE OR WAIST is where it inevitably goes.

FACING NAVY RAMP *are, left to right, maintenance hangars and operations building. TC-45J's, T-28's and T-1A's mingle with NAF's C-131's and C-54's for administrative flights, Tower, manned by FAA, and Air Force operations building and hangars are across field.*

NAF Washington Reports:

TRIPLE-EYED PILOTS EXTINCT

By Lt. Rawls B. Morgan

THE NAVAL AIR FACILITY, Washington, D. C.—often called the "Navy's Crossroads"—celebrated its second birthday in January at Andrews Air Force Base.

The many transient and proficiency pilots flying in and out of Washington probably have not realized how much time has slipped by since they were flying from NAS ANACOSTIA and playing the role of the fabled triple-eyed aviator with one eye on the dense air traffic at Washington National Airport and Bolling AF Base, a second eye on the four tall chimneys at the Naval Weapons Plant, and the third eye on the instruments. Extra sensory perception was nearly a survival requirement when operating out of historical and cramped Anacostia, but the wide-open spaces of the suburban Maryland setting of the Naval Air Facility at Andrews AF Base have given newfound comfort and safety to Naval Air Operations in Washington. Being a tenant activity has some disadvantages, but these are reasonably minimized for the Navy by Andrews' outstanding flight facilities featuring dual runways, 9700 feet long and 200 feet wide, with strobe-lighted approaches, and offering instrument approaches by GCA, ILS, LF, VOR, and TACAN. During instrument weather, GCA can bring a plane to landing every two minutes, utilizing both runways.

Navy operations, aircraft maintenance, supply, and Naval Air Reserve Training Unit are located on the East side of the field. Air Force Operations occupy the West side; therefore, normally, Air Force traffic lands on the west runway and the Navy uses the east. Uniquely, the control tower is manned exclusively by FAA personnel. This makes FAA the third organization concerned with flight operations at Andrews.

The mission of the Naval Air Facility, commanded by Capt. William R. Pittman, is to maintain and operate facilities and provide services and material to support proficiency flying for the 1075 desk-assigned Naval Aviators on active duty in the capital area. The facility also conducts administrative flight operations as designated by the Chief of Naval Operations.

To accomplish this double mission, 1000 enlisted personnel and 68 officers, of whom 42 are aviators, comprise the supporting force. Equipment flown by proficiency pilots includes the T-28B, T-1A, and the veteran TC-45J. Facility assigned pilots who give familiarization flights and instrument checks to proficiency pilots in these aircraft also fly C-54's, C-131's, and U-11A's, on administrative flights. There are many days when NAF transports can be found scattered from Norfolk to North Island.

To keep these planes in an "up" status, over half of all the enlisted personnel at the facility are assigned to Aircraft Maintenance. The mainte-

nance hangars have cantilevered roofs which create a contemporary air of vitality and motion to the Navy buildings. Proficiency pilots average 3000 flights totaling 11,000 hours every month. Add to these figures the 500 monthly transient flights and you have the ingredients for a bustling airport, not counting the volume of traffic at the Air Force side of the field.

The Air Force services 12,000 flight plans each month, of which 2000 are transient. These figures explicitly justify the unusual weather minimums for VFR traffic (2500 and 5) imposed on flights departing Andrews. The extremely high density of aircraft around the field requires extraordinary control procedures. Although many pilots have bemoaned the limitations, a comparable number praise them as contributing to security and safety. The VFR departure restrictions definitely do not apply to inbound aircraft. If the ceiling is less than 2500 feet and the visibility is less than five miles at Andrews AFB, the pilot of an aircraft inbound on a VFR flight plan should contact Washington approach control 25 miles from Andrews for radar advisory service. Approach control will inform pilots of all pertinent traffic. Unfortunately, not many aviators utilize this valuable safety service.

Although they might not have originally planned to RON in Washington, many pilots find it necessary to do so in order to complete the business for which the trip was made. The various Navy bureaus and buildings are anything but centrally located. Much time can be consumed in waiting for transportation and in the ride itself. Often an extra day in Washington is required.

STATION C-131 *awaits passengers in front of NAF Operations/Administration Building.*

To accommodate aviators in this predicament the Navy has a new, air-conditioned BOQ on the west side of the field, five miles from Navy operations. The BOQ has 56 rooms which can accommodate 72 transient officers every night. Although it is not necessary to have reservations, a flight advisory or message with a berthing request usually will assure you of a room. Closed messing facilities are not available; however, the Air Force Officer's Club is only a block from the BOQ and serves all meals.

Transient enlisted personnel have no problem in finding a room for the night in the newly constructed barracks, which are on the west side of the field, as are all living quarters. The galley, new and replete with almost every modern convenience is just a few steps from the transient barracks.

Usually the most vexing problem for transient pilots and crews is transportation. The Navy and the Air Force do not operate vehicles between Andrews and distant government installations, except for distinguished visitors. Unless prior confirmation of transportation between Andrews and government installations has been received, pilots or passengers in most cases will have to ride the Department of Defense bus to the Pentagon, BuPers, or other destinations.

The DOD operates scheduled bus transportation between Andrews and almost every government building in the area. One of these buses departs Andrews every hour on the hour, and the trip to the Pentagon area takes about an hour and a half, depending, of course, on the time of day. Commercial taxi service is available around-the-clock and commercial bus service makes its first run to town at 0610, its last at 0305. Taxi fare to the Pentagon area is six dollars and bus fare is 60 cents. Here are some mileages between the facility and the most often visited buildings: Capitol 12; Main Navy, 14; Pentagon-BuPers, 17; and Bethesda Naval Hospital, 23.

The increased local transportation difficulties which resulted from the move from Anacostia to Andrews are overshadowed by the added safety and convenience for proficiency pilots and transient aviators provided by the improved facilities of the Navy's "Crossroads." Andrews' counter-rotating flight patterns, improved ATC and obstacle-clear runways make the three-eyed pilot of the pre-1961 era extinct.

IN FLIGHT PLANNING *room, proficiency pilots, LCdr. Oscar Schaer (OpNav) and Capt. R. Larson, DCNO(Air) staff, select airway route.*

V. C. MARKOWSKI, *ADRAN, W. B. Lambrisky, ADR2, and G. P. Budd, ADRAN, work on Beechcraft used for proficiency flying.*

ON JANUARY 31, *Capt. Ronald W. Hoel, C.O. of VR-22, piloted the last C-118 Liftmaster (above) to depart VR-22 on a scheduled MATS passenger mission, a flight from NAS Norfolk to Spain via Newfoundland and the Azores. So one chapter in the history of VR-22 ended. In February a new chapter began as the first C-130 Hercules, designated for VR-22, was flown from the Lockheed plant at Marietta, Ga., to Norfolk. It is the first of ten aircraft to which VR-22 pilots and personnel are transitioning. In MATS, C-130E's are replacing the Liftmasters. Above, Capt. Hoel (2nd from left) accepts delivery of the Hercules from Capt. C. J. Eastman (left), Commander Naval Air Transport Wing, Atlantic.*

★ ★ ★ ★ ★

DEEP FREEZE WELCOMES TIROS HELP

U. S. Navy weathermen at Operation *Deep Freeze* Advance Headquarters at Christchurch, New Zealand, are getting some welcome help from *Tiros*, America's newest weather satellite. Launched from the Atlantic Missile Range at Wallops Station, Va., in December, it has already proved its worth in *Deep Freeze* weather forecasting.

Tiros has confirmed frontal areas already plotted on the Christchurch maps and recently discovered a low pressure system between Christchurch and McMurdo which none of the stations had been able to record. It is proving valuable also for in-flight weather reports to the aircraft making the 2200-mile journey between Christchurch and McMurdo.

Equipped with powerful cameras, *Tiros* is designed to do three basic things: It enlarges the area of observation over the present systems; it increases the frequency of observations; and it augments the accuracy and effective acquisition of weather data.

Orbiting at an altitude of 440 miles every 97 minutes, *Tiros* transmits pictures of clouds over 2000 miles to ground receivers similar to the one at *Deep Freeze* Headquarters.

Tiros is tracked from the Christchurch weather office by an antenna mounted on a large platform 45 feet in the air. According to Cdr. J. K. Allison, Meteorological Officer for *Deep Freeze*, *Tiros* is in range for about 14 minutes on a "good orbit." Since it takes three and a half minutes for the cameras to relay one weather picture, a maximum of five weather pictures can be received here during the 14-minute span. The average number of pictures per orbit is two.

There are, however, some restrictions: the satellite must pass in daylight hours for the pictures to be transmitted and the cameras must be pointed towards the earth.

"The data received from this satellite," Cdr. Allison said, "reaches us immediately. There is no delay in waiting for a facsimile to be wired from somewhere else. Where it used to take up to 12 hours to get this information, it now takes only seconds."

A duplicate system is nearly ready for operation at McMurdo Station, although the orbit which *Tiros* now makes will not bring it far enough above the horizon to be of any value to them. Another satellite is planned sometime in the future which will allow McMurdo to receive pictures. It will add to the accuracy of forecasting.

C-130 NATOPS Meeting

El Toro Hosts Revision Group

Representatives of all C-130 *Hercules* units in the Navy and Marine Corps held a five-day conference at MCAS El Toro, Calif., in February to revise the NATOPS manual. The manual is designed to help a C-130 squadron run at peak efficiency by combining the best parts of all squadron standard operating procedures.

The bi-annual conference was conducted by AirFMFPac's Standardization Section.

The manual deals with such facets of the C-130's operations as flight procedures, emergency procedures, communications, personal flight equipment, taxying, landing, takeoffs, etc.

VP-8 Returns to Patuxent

Has Completed AFB Bermuda Tour

Patrol Squadron Eight, operating from Kindley AFB, Bermuda, since July 1963, returned to NAS Patuxent River, Md., the end of February.

In addition to flying daily shipping surveillance flights from Kindley, VP-8 has participated in numerous training and evaluation exercises in the Bermuda area. In January alone, VP-8 logged more than 1000 flight hours.

VP-8 was relieved by VP-49, also equipped with the Lockheed P-3A and home-based at NAS Patuxent River.

JUPITER ENDS AN HONORABLE AND VARIED CAREER

SAYONARA *from the Baka Hachi reads the banner on the USS Jupiter at Yokosuka, Japan.*

STREAMERS *liven up dockside farewell ceremonies as Japanese wave American flags.*

THEY LOVED her and called her *baka hachi* ("crazy eight") and sadly bid her *sayonara* as she pulled out of Yokosuka for the last time and headed east for her final voyage to home waters.

For the past nine years, USS *Jupiter* (AVS-8) has served with the Seventh Fleet, having the distinction of being the only aviation stores ship in the Navy. In that near-decade, she steamed more than a quarter of a million miles.

Jupiter was a pre-WW II c-2 cargo ship built by the Federal Shipbuilding and Dry Dock Company of Kearny, N. J. She was first named SS *Flying Cloud* and then SS *Santa Catalina* before commissioning on August 22, 1942, when she took her current name.

Her first load of cargo was destined for Pago Pago, Samoa. In those early days of the war, her high pressure steam turbines created a big headache for the black gang and although she was classed as a 15-knot ship, some trips were made at very slow speed.

By war's end, she earned six battle stars on the Asiatic-Pacific Area Service Ribbon for participating in operations at the Gilbert Islands, Marianas, the Western Caroline Islands, Leyte, Iwo Jima, and Okinawa Gunto.

In April, 1944, *Jupiter* was temporarily assigned to the Fifth Amphibious Forces and was redesignated an AKA (attack, cargo, assault) ship. On July 31, 1945 she was changed to AVS-8. Nearly two years later, she was placed out of commission, in reserve, with the U.S. Pacific Reserve Fleet.

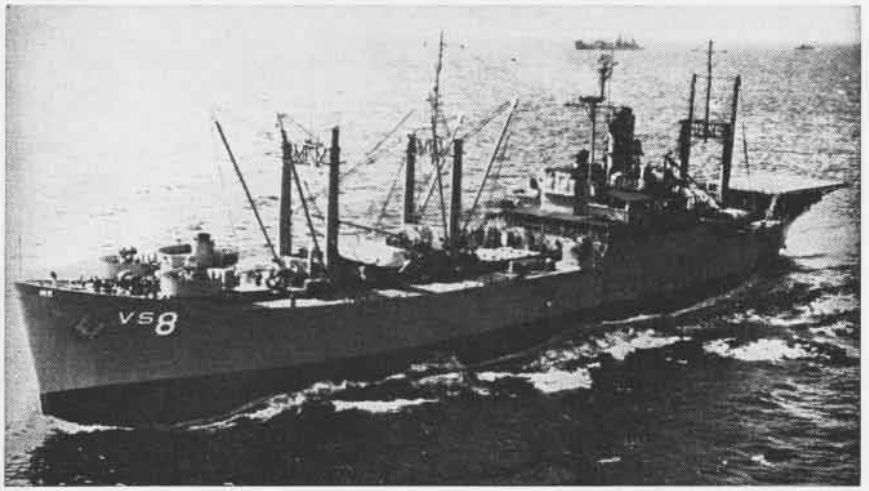
On September 20, 1950, she began reactivation process at San Diego and reported for duty the next month.

As an aviation stores ship, *Jupiter's* job consisted of providing aviation material support of carrier-type aircraft in the Western Pacific. She has carried about 19,000 different items in her storage spaces, ranging from such large items as canopies, doors, wings, radomes and helicopter blades, as well as small washers, nuts and bolts. Her cargo was ordered by the Aviation Supply Office in Philadelphia, responsible for getting the stores to the Fleet.

If a carrier or shore station needed an item for an aircraft and that item was not available locally but was listed in *Jupiter's* catalog, an order went to the ship. About 26 per cent of all such orders were emergencies and came to the ship by message, the rest routinely ordered by mail.

Most of *Jupiter's* issues were shipped through the Naval Supply Depot at Yokosuka for NAS ATSUGI to deliver to the customer by carrier-on-deck delivery. The rest of her issues were usually delivered by air parcel post or during underway replenishments by helo or high-line.

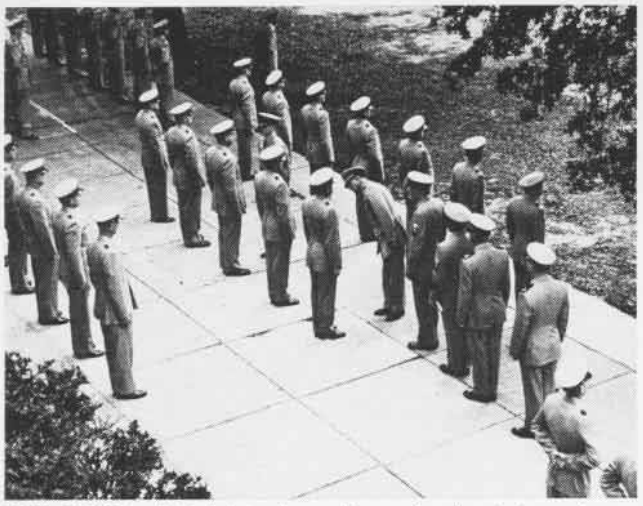
In Japanese waters, *Jupiter* steamed from the northern island of Hokkaido to the southern tip of Kyushu, conducting people-to-people programs. Her wake is a legacy of friendship.



USS JUPITER *(AVS-8), only aviation stores ship in the Navy, steams in Pacific waters to West Coast port for decommissioning after 22 years service. Final C.O. is Capt. Charles Muckenthaler.*

TALL IN THE COMPANY OF CHIEFS

IN THE MARCH *toward a stronger Navy, the Naval Air Training Command at NAS Pensacola conducts a five-week Chief Petty Officer Leadership School, convening eight times annually. Each class of 60 chiefs is composed of E-7's, -8's, and -9's, in or slated for key billets.*



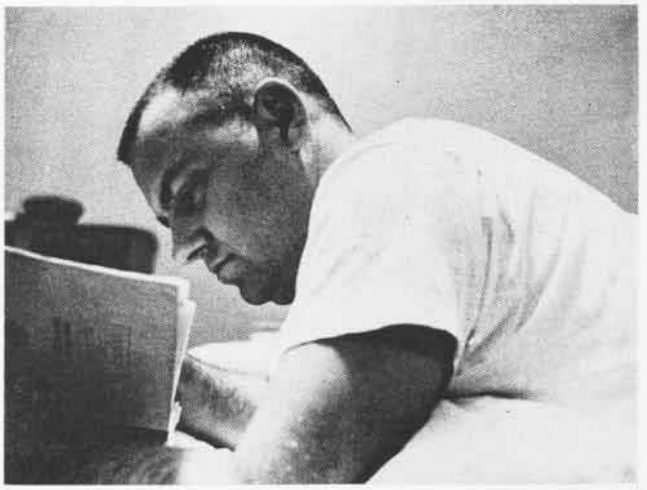
EACH CLASS *is divided into three platoons for the purpose of competition in academic achievement, military excellence, and athletics.*

FELLOW STUDENTS *discuss proper positioning of collar device. The "blue loop" on right shoulder indicates they are attending the school.*

EVEN MEALS *are regimented, though served in family style. The school is the most gruelling since recruit training; it is meant to be tough.*

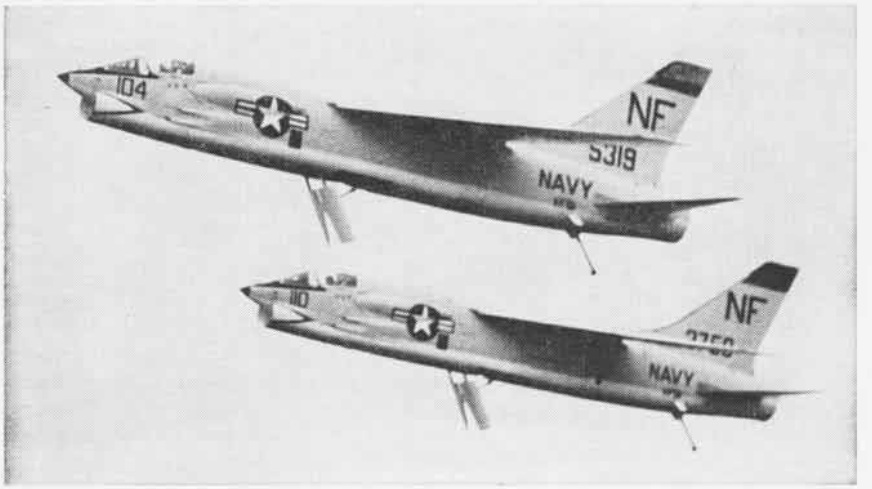
IN CLASS, *students study communism, geopolitics, moral leadership, management, military justice, naval history, speech, and military drill.*

PERSONNEL INSPECTIONS *are frequent and rigid. Great attention is shown to small detail, for competition among the platoons is sharp.*



BETWEEN 2300 *taps and 0630 reveille, sleep comes easily. But all waking hours are directed toward one goal: perfection of leadership.*

WEPTU TALENT HELPS FLEET



WEPTU UNITS *are assigned projects by BuWeps through the Chief of Naval Air Reserve Training. Among the current studies is one on F-8 Crusader aircraft operations by the Weekend Warriors.*

ALTHOUGH THEY are unheralded, Weapons Training Units (WEPTU'S) are an instrumental part of the Naval Air Reserve Training Command and engage in project activities which significantly benefit operational Fleet units. There are 51 WEPTU's located at air stations and NARTU's across the country. Designed to provide immediate mobilization of personnel for BUWEPS purposes in the event of national emergency, WEPTU's train about once a month and for a two-week period yearly.

For the past three years, aside from regular training responsibilities, the WEPTU's have undertaken a number of special projects. These projects originate with BUWEPS and its field activities are assigned to individual units by CNAResTra.

RAdm. George V. Koch, CNAResTra, said of one of the projects, "The results of a completed study on smokeless powder surveillance indicate procedures whereby BUWEPS can save an estimated two million dollars annually by utilizing recommendations proposed in the study."

The WEPTU's are manned by approximately 1000 officers, many of whom hold degrees in engineering or scientific areas. More than 800 have bachelor's degrees, over 130 have master's degrees and 19 have earned doctorates. Moreover, many of these reserve officers hold civilian jobs in technical fields closely associated with aviation.

The special projects program is a fitting vehicle for WEPTU purposes because it extends challenging jobs to talented reserve personnel and keeps them apace with progressive developments in the Navy.

A BuWeps Project Coordinator supervises the project once CNAResTra has decided which unit is best qualified to work on it. The projects themselves cover a variety of fields including engineering, design, production, procurement, training, logistics, cost effectiveness, weapons research and personnel management. They also differ in time required to finish them. Some need only 20 man-hours of labor. Others require over 500 man-hours of effort. A project may consume from one to ten months of a WEPTU's time.

In the past year, some of the completed studies dealt with compiling scientific and technical information bibliography, modification of airspeed indicators and quality assurance inspections at O&R facilities. Pending projects include one on F-8 *Crusader* aircraft operations by reserve squadrons and another on aircraft maintenance studies. Up through late 1963, 30 projects were assigned to 34 WEPTU's and nine have been completed.

With quiet and consistent effort, the WEPTU's have contributed vital information to the Navy while strengthening their own ranks. As Adm. Koch remarked, "This storehouse of talent . . . could very easily have been wasted or untapped except for such a program, but here we have gathered men with diversified skills . . . into a composite with great potential."

A Dream is Fulfilled

Son Receives his Golden Wings

The chief saluted the new ensign, shook the young man's hand, and accepted from him a 1921 silver dollar. The chief had waited 24 years and travelled some 5000 miles to get the coin.

When Senior Chief Construction Mechanic Louis B. Tharp pinned the wings of a Naval Aviator on his son Robert at NAS CORPUS CHRISTI, the

CHIEF THARP PINS WINGS ON ENS. THARP

ceremony represented the realization of a lifelong goal.

The day before, Ens. Robert Tharp, in Navy tradition, had given his father a silver dollar when the chief gave the young ensign his first salute.

"I waited 24 years and travelled all the way from the hills of Italy to the flatlands of Texas to get that dollar," Chief Tharp said. "I think I'm going to frame it."

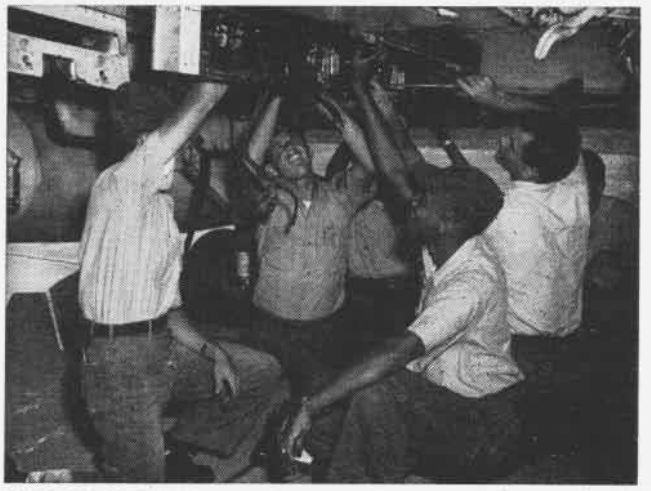
Chief Tharp is attached to the USS *Tallahatchie County*, an AVR homeported in Naples.

Ens. Tharp, according to his father, had wanted to become a Naval Aviator ever since he was old enough to know what an airplane was. It was a natural ambition for the boy. His father has been in the Navy 21 years.

In 1961, Tharp applied for the NavCad program while in boot camp, but it was not until he had finished electronics technician school that he learned he had been accepted as a NavCad. He completed final phase of flight training with VT-28.

NEWEST JET TARGET LAUNCHED

THE MISSILE CREW *at NS Roosevelt Roads runs through 41-step checkout on a console to determine readiness of target missile—AQM-37A.*



AVIATION ORDNANCEMEN, *electronic technicians and fire control technicians prepare the launcher on Skyhawk, for its missile target load.*

EARLY IN FEBRUARY at NS ROOSEVELT ROADS, Puerto Rico, missile crews successfully launched for the first time on the East Coast the Navy's newest missile target—the supersonic AQM-37A (NANEWS, January 1964, page 22).

Thirteen men from the station's Guided Missiles Division and representatives from the manufacturer installed the target on the underbelly of an A-4C *Skyhawk*. The pilot, a member of VA-36, attached to the USS *Saratoga* (CVA-60), then flew from the station to a rendezvous with the giant carrier at sea in the Atlantic.

Once the pilot launched the missile target from his *Skyhawk*, intercept jet aircraft from the carrier, armed with missiles, pursued the AQM-37A.

The AQM-37A was designed, developed, tested and produced by the Beech Aircraft Corporation, Wichita, Kans. It is capable of simulating invader aircraft and missile threats.

The high-performance, expendable target operates at altitudes ranging from 1000 to 70,000 feet at speeds of Mach 0.9 to over Mach 2.0. The target is an air-launched, prepackaged, liquid-rocket-propelled vehicle with self-contained guidance. The expendable target requires no recovery support.

Three crews handle the operation: a check crew, which assembles the missile and tests it on an automatic console that is programmed through a series of 41 steps; an ordnance crew, which charges the missile with high pressure nitrogen gas and installs the explosive cartridges; and an armament crew, which sets up the launcher on the underbelly of the launch aircraft, attaches the missile to the launcher and makes certain the aircraft is ready for launch.

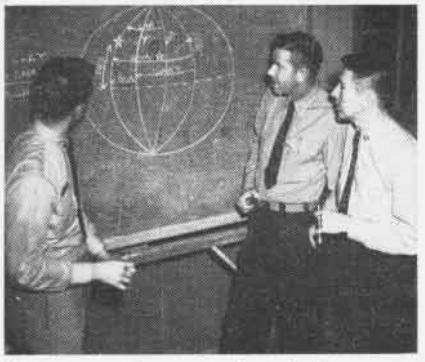
The missile can be readied for launch in less than an hour. It requires no maintenance and offers excellent training for squadron intercept training and missile-firing operations.

LIEUTENANT BENOIT, *attached to VA-36 on board the USS Saratoga, checks over missile target he will be firing as carrier pilots pursue him.*

THE FINISHING TOUCHES *are put on the new missile target as the Skyhawk is readied for the takeoff and launch of the target missile.*

VR-7'S CROSSROADS FOR NAVIGATORS

By Lt. J. B. DeFrancesco, Jr.



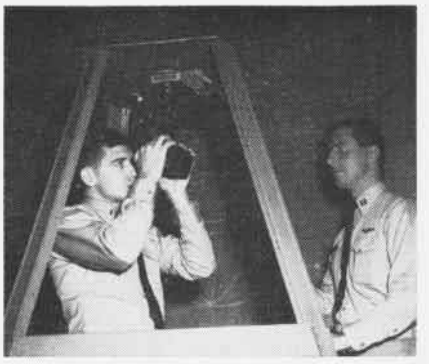
LT. NELSON *discusses celestial theory with LCdr. Walt Jordan and Lt. Bud Griswold.*

NAVIGATION INSTRUCTOR Lt. D. E. Nelson of Air Transport Squadron 7 would probably take a second look if he walked into his classroom one morning and saw a student wearing the uniform of Admiral Semmes' Confederate Navy, but he wouldn't be surprised.

The VR-7 school, NAS MOFFETT FIELD, which was originally established to provide squadron aviators and navigators with standardized MATS navigation procedures, has rapidly become a training center where Navy, Air Force and Coast Guard uniforms are common. Strategically located on the West Coast, the school has become a "crossroads for navigators" in the various services.

One recent class, attended by Ens. Ronald M. Sauter, the 1000th graduate of the Naval Aviation Officer School at Corpus Christi, also included two FAA inspectors who were on their annual two weeks Naval Air Reserve training duty; an active duty maintenance officer from a nearby Navy squadron who is trying to earn his NAO(N) wings; a Coast Guard navigation officer who was learning transport navigation procedures; and an Air Force captain who had come from the 49th state, Alaska.

The expansion of the Navigation School's training program grew out of its growing reputation for turning out highly qualified transport navigators. VR-7 is the only Navy MATS squadron on the West Coast. As such, its navigators flying missions to the Far East are confronted with transport routes covering the world's largest ocean. Since the MATS routes over the Pacific provide a minimum of electronic navigation aids, navigators must be thoroughly versed in basic celestial, dead reckoning, and pressure pattern navigation.



LTJG. A. L. GRAY *(left) practices celestial navigation on an aircraft sextant mockup.*

Upon completion of the two-week ground school phase, students are tutored in flight. Successful completion of the course in the airborne classroom leads to designation of Transport Navigator. Students hope to be upgraded eventually to Navigation Instructor and, ultimately, to Navigation Flight Examiner.

Lt. Nelson, himself a Navigation Flight Examiner, heads the navigation ground school. Author of the squadron's new syllabus, he is an expert in his field. He has navigated over the North Atlantic, Mediterranean, Caribbean, Indian Ocean, as well as the Pacific. He was recently a navigator in a round-the-world flight in a Lockheed C-130 *Hercules* as part of the MATS' Operation *Big Lift.*

The transition from the C-121 *Super Constellation* to the C-130E *Hercules* with its global airlift concept has placed an additional navigational requirement upon VR-7. VR-7 is meeting these advanced requirements with an intensified navigational program. Included in the new syllabus are such techniques as grid navigation, airborne radar approaches, doppler navigation, and airdropping men and materials by the computed air release point system (CARP).

Capt. E. W. Bergstrom, Commanding Officer of VR-7, is confident this advanced training program is keeping Navy MATS in step with the jet age.

AT THE NAVIGATION SCHOOL, *every advantage is taken of various visual aids to training. Here Lt. Nelson and four of his students are having an informal refresher on the celestial sphere.*

Trackers Replace Invaders

To Provide Aerial Target Service

Utility Squadron Two, Detachment Alpha, NAS QUONSET POINT, is receiving two Grumman *Trackers* in addition to the two they have already received. They are replacing three B-26J *Invaders* which the squadron has been operating for more than three years.

The mission of the detachment is to provide aerial target services to Fleet units in the Narragansett Bay and Boston area. The targets are 23-foot sleeves attached to armored cables and towed 7000 feet behind the aircraft.

Although the *Invaders* have served the squadron well, ships have found that slower planes are more successful.

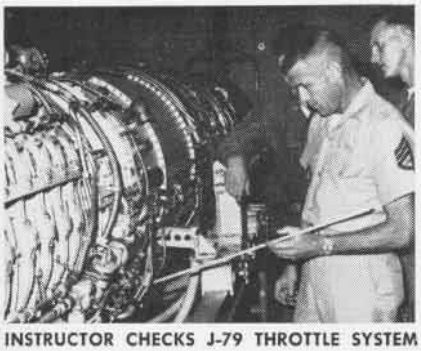
Three of the new *Trackers* will inherit the names of the outgoing *Invaders*. First used as lightweight bombers in World War II, the *Invaders* were named *The City of Providence*, *The Town of East Greenwich*, and *The Village of Wickford*. The fourth plane will be named at some future date.

Utility Squadron Two is home-based at NAS OCEANA. The squadron's Detachment Alpha was formed at Quonset in July 1960. It is comprised of about 60 officers and men.

Training F-4B Technicians

Complex Systems Carefully Studied

At MCAS EL TORO, Calif., Naval Air Maintenance Training Group's Detachment 1023 is meeting the need of training people who are more than all-around mechanics. Specialization has set in. Men are needed who are electronics technicians, Marines who understand advanced pneumatic systems, complex engines and literally dozens of smaller related systems.



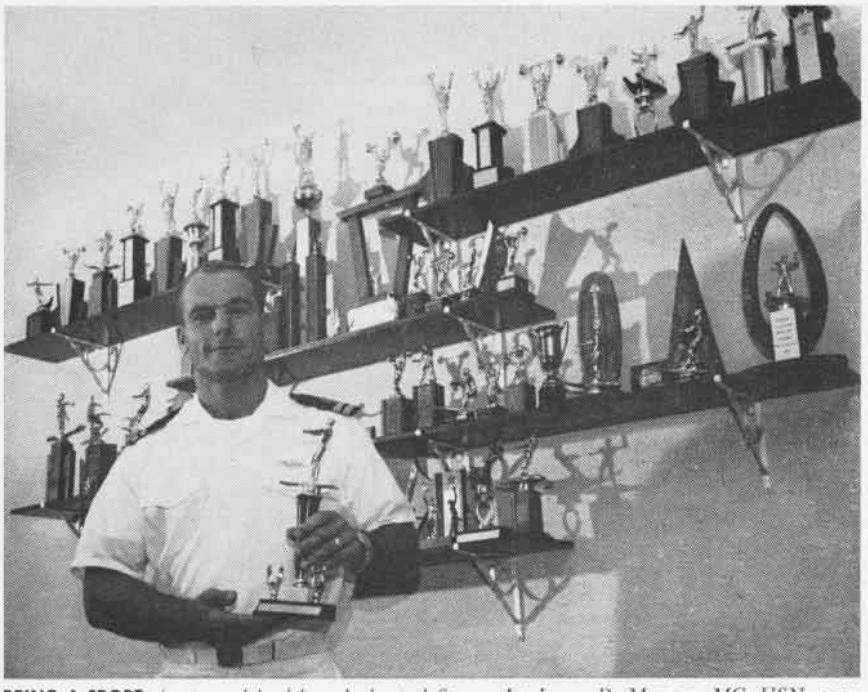
INSTRUCTOR CHECKS J-79 THROTTLE SYSTEM

The 21 men of NAMTraDet 1023 can look back on a year of experience. The detachment has trained more than 1000 students in the intricacies of the F-4B *Phantom II*.

The course covers engine maintenance and fuel systems, electrical systems, communications, navigation and Midentification units, hydraulics and flight control gear as well as safety and survival.

For *Phantom* pilots from VMFA-513 and VMFA-542, training is offered in the F-4B cockpit orientation trainer. There are similar training facilities at NAS MIRAMAR and NAS OCEANA.

Det. 1023 has equipment valued in excess of two-and-one-half million dollars. The devices are designed to operate, malfunction and do things the actual system could be expected to do.



BEING A SPORT *about good health and physical fitness, Lt. James D. Morgan, MC, USN, practices what he preaches. He has won over 100 trophies, cups, medals, plaques and emblems for his athletic prowess in swimming, wrestling, diving, weightlifting, skin-diving, boxing, badminton, football, water skiing. In spare time, he works on push-ups and set-ups. He recently set a water skiing jump record at Orlando, Fla. Dr. Morgan is a VX-1 flight surgeon at NAS Key West.*

CNABaTra Commends VT-1

Continues to Uphold Safety Record

Training Squadron One, Saufley Field, Pensacola, received a commendation from the Chief of Naval Air Basic Training for achieving an accident-free quarter during the Second Quarter, Fiscal Year 1964. The squadron's Commanding Officer, Cdr. R. E. Orcutt, received the award. To achieve it, VT-1 flew 17,399 consecutive accident-free hours while training student pilots.

VT-1's safety record since its commissioning in May of 1960 has been outstanding. The squadron received the CNABaTra Commendation Plaque for reducing its low accident rate per 10,000 hours from 0.44 to the remarkable figure of 0.11. The CNO Aviation Safety Award came to VT-1 in September 1962 as well as the Beechcraft Aviation Award presented for flying more than 75,000 accident-free hours.

AT NORTH ISLAND, *Mrs. Reynolds admires Legion of Merit presented by VAdm. P. D. Stroop, ComNavAirPac, to RAdm. R. M. Reynolds (Ret.) for outstanding service as Fleet Material Officer and BuWeps Rep., 1959-63.*

1000TH TRAINEE IS INDOCTRINATED

THE FULL Pressure Suit Training Unit at NAS NORFOLK reached a milestone in its history when Capt. R. E. Luehrs became the 1000th trainee for indoctrination in the use of Omni-Environmental Full Pressure Suits.

In 1959, ComNavAirLant requested that usage of the full pressure suit become Fleet-wide, nearly four years after the FPST unit started its training program. Since then, the unit has grown in size to its current level, indoctrinating 30 to 35 trainees a month. The unit includes military and civilian counterparts of space research teams and is headed by Lt. C. C. Cole, Medical Service Corps.

Main duties of the enlisted personnel assigned are the maintenance and testing of equipment, fitting the pilots with pressure suits and aiding in the testing program.

The full pressure suit protects the pilot in high altitude flights from the loss of outside pressure on the body. The suit pressurizes automatically at 35,000 feet and maintains an even pressure of 3.4 pounds per square inch on the pilot at altitudes above 35,000 feet. The capsule or cockpit is ordinarily pressurized, but should it develop a leak, or if the pilot ejects, the suit offers maximum protection.

To illustrate the necessity of pressurization: at 63,000 feet, the boiling point of water is reduced to 96.6° F., owing to lack of pressure. The blood in a man's body would boil and cause such pressure that he would literally explode.

The full pressure suit is airtight and watertight, offering, in addition to pressurization, protection from exposure to heat, cold, wind and water. Should a pilot eject, the suit protects him from extremes in temperature. If he is ditched in water, the suit becomes a watertight flotation unit with a self-contained oxygen supply. Should the pilot submerge upon entry into the ocean, the suit can function to a depth as great as 180 feet.

The first attempts to develop a working pressure suit produced heavy, clumsy suits with little mobility. Early partial pressure suits exerted mechanical pressure on the pilot by partial inflation, which tightened the suit. They were impractical because they caused bruising.

CAPT. LUEHRS IS FITTED FOR TEST SUIT

Modern full pressure suits work by air pressure and are relatively comfortable, mobile and lightweight. Suits tested at the NAS training unit are similar to the suits used by Project *Mercury* astronauts, lacking only the heat-reflecting silver coating which is the trademark of space suits.

The training unit indoctrinates pilots in the use of full pressure suits in the final phase of training for high performance jet aircraft. Both the pilot and the suit are tested in the pressure chamber. Here, the emphasis is on the pilot, for the suits have already undergone extensive high pressure testing. The two-day course consists of pressure chamber tests at the 70,000-foot pressure level, explosive decompression, ejection seat, and training on how to survive in the water.

Safety is a prime factor in testing. Before undergoing a pressure test, the trainee breathes pure oxygen for 15 minutes to prevent nitrogen narcosis (the bends) at high altitudes. During pressure chamber tests, outside observers stand by to bring the pressure back to normal and aid the trainee, if it becomes suddenly necessary.

Although a great deal of progress has been made in the development of pressure suits, research continues. Improvements are constantly being made, many as a result of pilots' suggestions.

Barter Buys Spare Parts

U.S. Cotton for British-made Seats

A two-million dollar negotiation involving the barter of U.S. surplus cotton to pay for British-made aircraft ejection seat spare parts was announced by the U.S. Navy Purchasing Office in London.

A three-way arrangement was made. A U.S. firm will sell the cotton in Southeast Asia. The proceeds will then be transferred to London to pay for the plane equipment. The Martin-Baker Aircraft Co., Ltd., a pioneer in the ejection seat field, will supply parts to the U.S. Navy, Army and Air Force. Navy officials negotiated in behalf of the other services.

The primary purpose of the barter-funding arrangement was to assist in stemming the outward flow of gold in buying necessary foreign equipment.

Allenberg Cotton Company of Memphis, Tenn., will dispose of the surplus cotton in Southeast Asia. The currency transfers will be handled by a London bank.

U.S. Armed Forces in Europe have been studying barter possibilities since the program was authorized in March 1963 as a curb on the gold flow. The cotton-for-parts announcement represents a breakthrough in barter procurement: this is the first time that it has been applied to multiple purchases over a period of time.

Photo System is Tested

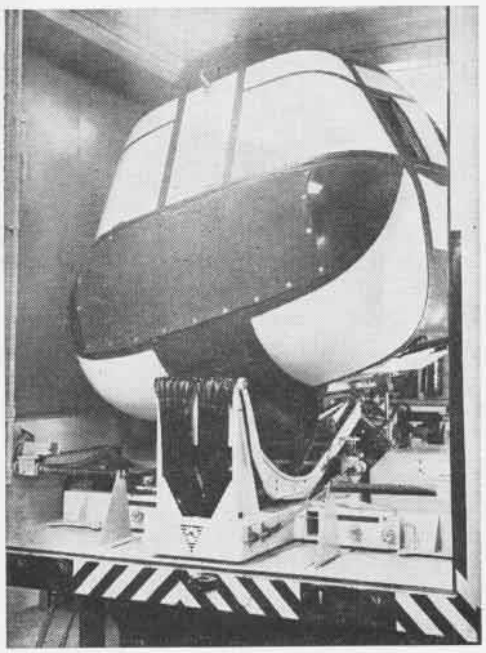
CV Operations Filmed by NAEC

A ten-man team from the Naval Air Engineering Center (NAEC) conducted tests aboard the USS *Oriskany* and the USS *Midway* in the Pacific early this year by photographing aircraft operations in all kinds of weather. The team consisted of eight engineers and technicians from the Aeronautical Structures Laboratory (ASL) and two photographers from the NAEC Motion Picture Laboratory.

The team's primary purpose was to film flight operations in rough sea states. Another objective was to evaluate the new ASL 70mm photographic system for obtaining data on aircraft during carrier landings.

Information is being studied at ASL to obtain design and performance criteria for aircraft and to aid in the development of carrier landing systems.

TANDEM-ROTOR COPTER TRAINER IN DEBUT



CH-46A TRAINER *is first ever developed that successfully simulates the tandem-rotor helicopter.*

CAPT. HOLMQUIST, *USN (right), C.O. of Naval Training Device Center, Port Washington, turns over trainer to Col. Fusan, USMC, C.O. of MCAF New River (left).*

THE U. S. NAVAL TRAINING DEVICE CENTER, Port Washington, N.Y., has provided U. S. Marine Corps Air Group 26, New River, N. C., with the first training device ever developed to simulate the tandem-rotor helicopter.

Known as Operational Flight Trainer 2F75, the device simulates the CH-46A all-weather helicopter designed by the Vertol Division of Boeing Company.

According to Capt. Carl O. Holmquist, Commanding Officer of the U.S. Naval Training Device Center, "The mission of this training device is to give CH-46A pilots and copilots training in the handling of the helicopter on the ground and in flight. Owing to the facilities incorporated in the device, this includes a thorough and intensive training program in cockpit familiarization, instrument flying, in-flight planning, normal and emergency procedures, and ground operation. Techniques taught may include the use of the aircraft communication system and the navigation systems."

Training Device 2F75 is housed in a trailer, divided into three compartments—trainee, instructor and computer. It was manufactured for the Training Device Center by Melpar, Inc.

In describing the mission of the CH-46A helicopter, the Commanding Officer of Marine Corps Air Facility, New River, Col. F. C. Fusan, says, "The CH-46A is used to rapidly disperse combat troops, support equipment and supplies from amphibious assault landing ships and established airfields to advanced bases with limited maintenance and logistic support."

During the simulated flight in the new device, transistorized electromechanical analog computers determine the aerodynamic characteristics of the forward rotor, aft rotor, and fuselage. The computer is programmed to respond to the inputs of the students and the instructor through the complete range of the helicopter's performance.

A procedure-indicating system enables the instructor to monitor the student's adherence to specific squadron procedures governing normal and emergency conditions. The system utilizes a 35mm slide projector with all the procedures on slides. Once the system is energized, the procedures appear on the screen above the instructor's engine panel in pre-programmed sequence. Emergency procedures appear when the instructor inserts a malfunction to test the student.

The normal procedures programmed are pre-takeoff checks, engine start, blade folding, shut-down checks, and emergency procedures, such as engine fire, engine flame-out, and hot start for each engine. The projector can be used for maintenance purposes by converting the system schematics, schematic diagrams, etc., to slides and projecting these on the screen during maintenance periods.

By using variable intensity light in the cockpit compartment and translucent windows in the cockpit, environmental effects, such as varying conditions of daylight, clouds, and lightning, are simulated. Sounds associated with turbine engine starting and running as well as rotor and transmission noises are also simulated.

Radio navigation and communication equipment associated with the CH-46A helicopter is reproduced in the trainer. The instructor can set up the simulated ground facilities necessary to provide radio navigation training within a 300-mile square area. A plotting board allows the ground track of the aircraft to be observed during training flight. ★★★

OPERATION 'BIG STEP'

An outstanding educational program was undertaken last October at the Naval Auxiliary Air Station, New Iberia, La. It challenged particularly those who did not have a high school diploma and some of the men are making plans, on the basis of GED tests, to take college level work.

OPERATION BIG STEP was launched at NAAS NEW IBERIA October 31, 1963. Attending the preview were all men at the station whose records showed they did not have a high school diploma or equivalent, 134 personnel ranging from E-2 to E-7.

The Commanding Officer, Capt. Gordon J. Brown, kicked off the program with a short address emphasizing the need for basic education as a foundation on which to build any career—military or civilian—and the value of a high school diploma or equivalent when seeking employment. He then introduced Master Chief Aviation Machinist Mate E. J. Michaels, the station Career Counsellor, who explained the objectives of the program. LCdr. W. A. Foley, who planned and organized the details of the program, made the presentation.

The educational drive was planned as a series of phases which involved, first, searching every record to determine who would be eligible to take the General Educational Development (GED) Tests and then coordinating the program with station departments to insure the availability of the candidates without interfering with the mission of the command. Once personnel had volunteered to take the GED tests, the examinations were obtained from United States Armed Forces Institute (USAFI) and administered. Upon the return of the scores from USAFI, the GED Certificates would be presented to those who had successfully passed the examinations. Then there would be an analysis and evaluation of results and a follow-up with individuals who failed to obtain a certificate or should go on to higher educational levels.

Taking the GED tests was entirely voluntary. The Educational Services Officer, Ltjg. J. W. Cyrus, Jr., was in charge of the testing program. The tests were administered in the station mess hall each morning at 0830. One half of the total number scheduled began November 26. The remaining group began during the first week in December.

LCDR. WALTER A. FOLEY, *Administrative Officer, puts down the first phases of the program which originated with Master Chief Aviation Machinist Mate E. J. Michaels, station career counselor.*

Early in January the results were received. Fifty-two men successfully completed the requirements for High School Equivalency Certificates. Forty failed one or more parts, and eleven returned their examinations partially incomplete. Four tests were returned unused.

Twenty-one of the 52 successfully completing the tests were petty officers; the remaining were non-rated personnel, all of whom had less than three years of active duty.

Of those successfully completing the tests, 25% had completed the 11th grade; 32½%, 10th grade; 25%, 9th grade; 16%, 8th grade and only 1½% had not finished grammar school.

In the cases of the 40 unsuccessful completions, 18 failed only one part, three by only one point; 50% had no high school attendance; 27% had completed 9th grade; 15%, 10th grade, and 7¼% had completed 11th grade.

The record showed that personnel who are capable of advancing to petty officers are successfully passing the high school GED tests, and those who have the higher educational background are making better scores, almost in direct proportion to their educational level.

Operation *Big Step* produced additional gains. While the program was in progress, 24 college level GED tests were administered. After the results

were received, ten men made applications for high school diplomas or Board of Education Certificates from their respective schools or states. Twenty-four men enrolled in the USAFI courses as a result of the program.

The acquisition of a high school equivalency certificate is not the ultimate goal of *Big Step*. Results of the tests are being analyzed and evaluated. For those whose scores indicate further attainment is possible, guidance will be aimed toward higher educational achievements—college level correspondence courses, college level GED, off-duty attendance at institutions of higher learning.

Servicemen have the opportunity to take GED tests at no cost. The validity of the GED is so well established that some colleges accept the high school level results for entrance and grant credit toward higher level education on the first year college level GED. It was to arouse the personnel at the station to this advantage that NAAS NEW IBERIA launched and carried out Operation *Big Step*.

Admirals were 'Copilots'

Pilot Honored on 10,000th Hour

When LCdr. Earl J. Turner, Air Officer, Air Department at U.S. Naval Weapons Laboratory, Dahlgren, Va., logged his last minutes in his 10,000-hour record, he had three distinguished admirals who served as "copilots."

Needing only six minutes to climax his 10,000 hours, LCdr. Turner made a 42-minute flight. Accompanying him were Adm. J. J. Ballentine, VAdm. C. T. Durgin, and RAdm. B. L. Braun, all three USN (Ret). The admirals were Naval Aviators during their naval careers.

Adm. Ballentine served at the Lab (then the Naval Proving Ground) from 1922 to 1926 as OinC of the Naval Air Detail. When Carl Norden, a Navy consultant, designed his first bombsight in 1923, Adm. Ballentine, then a lieutenant, put it through its original tests and later tested the production model. He also controlled from the ground the first plane operated under radio control.

VAdm. Durgin, who was designated a Naval Aviator in 1920, was serving in the Office of the Chief of Naval Operations when he retired in 1951.

RAdm. Braun was designated a Naval Aviator in August 1931 and served at NWL from June 1934 to June 1937.

If the flying time of the three admirals and LCdr. Turner were added, the total would come to almost 25,000 hours of flight.

Upon the completion of the 10,000 hours, fitting ceremonies at the Lab marked the occasion. Speaking in behalf of the three "copilots," Adm. Ballentine said, "We are highly honored to have been chosen to fly with LCdr. Turner on this memorable occasion."

STANDING L. TO R., VADM. DURGIN, LCDR. TURNER, RADM. BRAUN AND ADM. BALLENTINE

CDR. EUGENE BEZORE, *a Naval Aviator, recently became the first naval officer to complete a Marine Flight Training program. He took the eight-week helicopter transition course given by MMH-262 at MCAF New River.*

HT-8 Plan is Efficient

Squadron Flies 25% More Hours

How to "accomplish more and use less" is the practical result of a new flight scheduling system now in effect at ALF ELLYSON FIELD.

Lt. Max Quitiquit, Hangar 903 Maintenance Division Officer, originated a plan that brought about a complete reorganization of the flight scheduling system at HT-8. Compared to the old system, about 25 per cent more flight hours can now be realized with a use of 15 per cent fewer aircraft.

Under the old schedule, 50 per cent aircraft availability was required from both the east and west lines to insure the simultaneous flying of 15 helicopters six times daily. This often meant the line crews had to begin post-flight checks as soon as possible after an aircraft landed, so that it would be ready to fly again in only 1½ hours. Often, aircraft were released to fly with "up gripes" that would have to wait until flying was secured for the day.

In the new system, more aircraft are launched, but in smaller groups. This presents line crews with a steady flow of helicopters that will be on the ground long enough for a thorough post-flight check.

The new schedule was adopted by HT-8 in January and is still in the trial stage, but it is said to be "working great" by Cdr. M. G. Knouse, HT-8 Training Officer. The rest of the fiscal year will serve as a period to test the effectiveness of the system.

SELECTED AIR RESERVE

W. P. WOODLEY *(R), Hampton Roads Navy League, presents Naval Air Reservist of Year Award to James Hartley, AX-1, as Capt. McAfee, C.O., NARTU, Norfolk, and RAdm. Taylor look on.*

Naval Air Reservist of the Year

Each year the Hampton Roads Council of the Navy League makes an annual award to the outstanding enlisted man from the Selected Air Reserve at Norfolk, and names him Naval Air Reservist of the Year.

This year, James A. Hartley, AX1, USNR-R, of VS-863, was the recipient of this honor. The presentation of the award was made by Mr. William P. Woodley, President of the Hampton Roads Council. Attending the ceremony were RAdm. E. B. Taylor, Com 5, and Capt. F. M. McAfee, Commanding Officer of NARTU NORFOLK.

Hartley is an air crew member in the S-2 *Tracker,* well qualified by training and experience in anti-submarine warfare tactics as well as the maintenance and operation of electronics equipment. He has missed only five drill weekends in over 13 years. He is an active participant in community affairs and a leader in the activities of the Veterans of Foreign Wars. In WW II, he served in both the Atlantic and Pacific Theaters.

Brothers in Arms

Brothers who drill together are in the news. Air Anti-submarine Squadron 814, NAS TWIN CITIES, has three brothers in its ranks. The Schneider brothers are Dennis, ADR1, Donald, ADR2, and Everett, ATR3.

The Schneiders have two more brothers serving in the Navy—Michael, AN, with VA-164, and John, AA, attending school at Memphis. A sixth brother, Norman, recently released from active service, plans to join his brothers in the ranks of VP-814. Not only are the Schneiders a six-way Navy family, but the brothers are all affiliated with Naval Aviation.

Recruiting Gains

Pulling out all stops and displaying no concern toward regular working hours, NAS TWIN CITIES chalked up a 107 monthly net gain for a total of 159 enlistments in January. This figure included 118 first enlistments into the Naval Air Reserve "Six-month" and "Two-by-Six" training program and 41 veterans affiliating with the Weekend Warrior Program at the station. The drive was under the direction of LCdr. Whitney E. Lee.

For January also, 15 California recruiters, helped by the Reserve squadrons at NAS LOS ALAMITOS, signed up 170 men. During the first seven months of FY 1964, this Southern California air station has enlisted an average of 127 first enlistments and veterans affiliations monthly.

First to Qualify in Dallas F-8A

The distinction of being the first Naval Air Reserve Aviator to qualify in the F-8A *Crusader* belongs to Lt. Billy C. Bell attached to VF-701 at Dallas, Texas. Veteran Marine Pilot, Maj. Virgil L. Mash was the first to fly a Dallas F-8A jet (NANEWS, March 1964, p. 31).

Lt. Bell was met at the chocks by Capt. W. A. Racette, Commanding

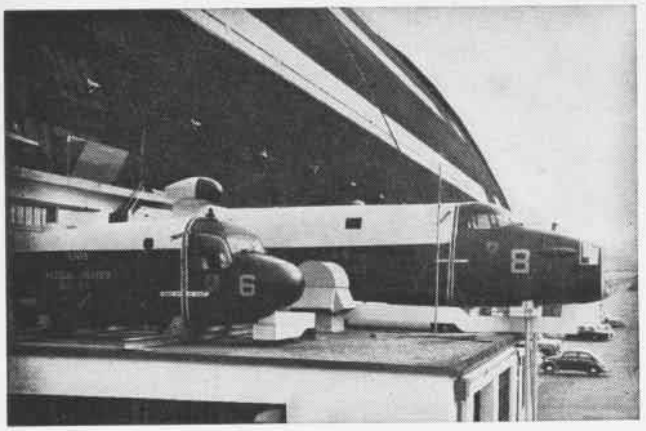
LT. BELL *(C) is congratulated by Capt. Racette; "chase pilot" Lamoreaux stands at left.*

Officer at NAS DALLAS, where he was congratulated and presented a "Thousand Mile an Hour" pin and a miniature model of the F-8A. His "chase pilot" for the qualifying flight was Cdr. T. C. Lamoreaux, station VF training officer.

Agfa Holds Photographic Seminar

Twenty-one Selected Reservists from Air Wing Staff 83 and four men on active duty at NAS NEW YORK attended a two-day color film seminar at the Agfa, Inc., processing laboratories in Flushing, N. Y., and the headquarters plant at Rockleigh, N. J. It was the first of several film processing seminars Agfa plans to hold for various segments of the Armed Forces.

Reservists in the group were led by Henry L. Silz, PHC, leading chief of NAS NEW YORK's photo laboratory.



TRAINER *at NAS South Weymouth is the product of "Yankee" ingenuity; it was salvaged from a SP-2E aircraft which was considered a loss.*

ASW INSTRUCTORS *manning Tactical Trainer Control Center listen to pilot working in a trainer outside hangar during a training exercise.*

Neptune Becomes ASW Trainer

Anti-submarine warfare readiness at NAS SOUTH WEYMOUTH, Mass., is going to higher levels. One reason is the indomitable "can-do" spirit and "Yankee ingenuity" of LCdr. Paul E. LeBlanc, the station's ASW Training Officer and his crew of specialists.

Through an inquiry to Commander, Fleet Air Wings, Atlantic Fleet, LCdr. LeBlanc learned that a twin-engine, Navy SP-2E patrol aircraft, which was considered a "strike" or total loss, was located at NAS BRUNSWICK, Maine, This inquiry started the wheels turning.

CNO approved the transfer of the grounded aircraft from Maine to Massachusetts. The ASW Training Officer and his crew, with the assistance and "mule-hauling" of South Weymouth Public Works Department, installed the entire flight-crew section and associated electronics equipment of the damaged aircraft, alongside the GS-2F ASW tactical trainer, on the flat roof outside the huge blimp hangar at the air station.

The refurbished SP-2E *Neptune* has been incorporated into an ASW Tactical Trainers Control Center along with the previously installed GS-2F trainer. This tie-in enables ASW instructors to work both tactical trainers simultaneously or individually, and to provide the necessary inputs for all ASW detection and localization systems required. Additionally, the ASW Training Officer can monitor a full scale ASW problem when it is conducted by the Operational Control Center located in another building. By incorporating the two ASW tactical trainers into the ASW program, training effectiveness has increased by approximately 85%, it was estimated.

ORI Inspection at Los Alamitos

BGen. Hugh M. Elwood, CG, Marine Air Reserve Training Command, Glenview, Ill., administered the oath of enlistment to 11 recruits at MARTD LOS ALAMITOS at the start of a two-day operational readiness inspection.

The Marine Air Reserve Training Detachment Proficiency Trophy was presented to Col. Albert L. Clark, C.O. of the Los Alamitos detachment, by Gen. Elwood. The award is presented annually to the Marine Air Reserve Detachment which produces the highest flight hour total and the best efficiency and performance record.

A REUNION *took place at MARTD, Los Alamitos, when Maj. H. W. Steadman again met the recruiting poster (left) for which he posed in 1948 as a Marine Sergeant. At right is the recruiting sentinel of the present day.*

Approximately 500 Marine air reservists participated in the two-day inspection: VMA-124 commanded by LCol. G. M. Wallace, HMM-764 led by LCol. R. W. Folk, MASS-4 under the command of LCol. J. H. Ennon, H&HS-47 commanded by LCol. G. A. Erickson, and MABS-47 with LCol. D. W. Christenson commanding.

The inspection closed with a fire-fighting demonstration and a critique of the inspection.

VMF-221's Safety Record

The Marine fighter squadron that recorded the second highest number of confirmed kills during WW II now holds the all-time record for accident-free flying in the Marine Air Reserves.

VMF-221 of MARTD MEMPHIS, Tenn., completed its eighth straight year of flight operations without a single mishap on January 26. VMF-221 is commanded by LCol. R. G. Thomas.

According to the MARTC Aviation Safety Office, this record is unequalled in Marine Air Reserve history and possibly in the history of Marine and Naval Aviation for tactical squadrons.

LCol. William T. Witt, Aviation Safety Officer for the command, lauded VMF-221 for its teamwork.

During the past calendar year, VMF-221 tallied a total of 1002 flight hours, averaging 100.1 hours per pilot. While complete figures for the past eight years are not available, total hours flown during the accident-free period are estimated to be in excess of 9000, based on figures on hand.

AT SEA WITH THE CARRIERS

RETURNING TO OPERATIONAL *status in the Pacific Fleet, USS Yorktown (CVS-10) is berthed at Long Beach Naval Shipyard where she underwent overhaul. Sea trials were begun in March.*

PACIFIC FLEET

YORKTOWN (CVS-10)

The ship's library in the *Yorktown* has been relocated, given larger space and completely refurbished while in Long Beach Naval Shipyard for overhaul. Learning there was a shortage of books aboard, the Disabled American Veterans of Alhambra, Calif., filled some of the vacant shelves; they donated 700 volumes.

KEARSARGE (CVS-33)

In a newsletter to the families of officers and men in VS-25, Cdr. L. W. S. Laubach, commanding, noted: "Following a week at El Centro, we qualified aboard the USS *Kearsarge* (CVS-33). Working with *Kearsarge* was a little different than the familiar USS *Yorktown* (CVS-10), but it is always broadening to operate with our fellow seamen whose ranks stretch around the world."

Visitors of a different sort and in greater numbers boarded the carrier during the ship's first open house since her return to home port, Long Beach, Calif. A total of 10,301 guests were counted.

BENNINGTON (CVS-20)

Before departing CONUS for the Far East, *Bennington* passed her Administrative and Material Inspection with the grade of "High Excellent." After the inspection, Commander Anti-Submarine Group One stated, "I would be proud to serve aboard this ship." Others in the inspecting party concurred, commenting favorably on the cleanliness and readiness of the carrier, which is commanded by Capt. John S. Hill.

Also before departing, *Bennington* came to the assistance of a collision at sea when it received this message from the USS *Osborn* (DD-846):

HAVE BM2 IN MINOR COLLISION WITH SCUTTLE X HE LOST X NOSE BENT X SWELLING NOW REDUCED X REQUEST HELO TRANSFER TO BENN FOR XRAY AND REALIGNMENT X WILL HI-LINE IF ASKED X

Nor was all serene aboard the accompanying *Cowell* (DD-547). A heavy wave slammed an MM1 heavily against the ship's superstructure, fracturing his hip. Both accidents occurred in heavy seas. Both men were hi-lined to the carrier for treatment, the MM1 later transferred to the San Diego Naval Hospital.

MIDWAY (CVA-41)

Sea lawyers in the *Midway* were astonished when the carrier visited Subic Bay in the Philippines. Aboard came Raymond Burr, TV's Perry Mason, then on an around-the-world cruise. During his stay aboard, the actor visited as many of the deep recesses of the ship as he could reach, greeting and talking with the surprised crewmen.

When the carrier reached Japan, military and Japanese officials boarded to witness a formal change of command ceremony as Capt. Whitney Wright relieved Capt. L. E. Harris.

Air activities produced a few X000th landings. The 500th landing of the UH-2A *Seasprite* was made by Ltjg. George Blake Arthun of HU-1's Detachment Alfa.

Midway's 114,000th arrested landing aboard was made by Ltjg. William Wilson of Airborne Photographic Squadron 63 in an RF-8A *Crusader*, while returning from a training flight off the Philippines.

The 115,000th landing was made while the carrier operated at sea off Japan. Lt. Dennis C. Glover of VAH-8 made the landing, with Lt. William T. Fantry aboard as bombardier, and Raymond Durbin, AT2, as navigator.

Lt. W. T. Eads of VA-25 made the

ROYAL NAVY *squadron patch is given Cdr. Smith, VA-22, by Lt. Rust, Royal Marines.*

116,000th landing, in a *Skyraider*.

When the carrier visited Hong Kong, 450 orphans came aboard for a party. Among them were *Midway's* two adopted sons, Wong Muk Cheung and Chan Fat Ming.

ORISKANY (CVA-34)

While in Hong Kong, the officers and men of Carrier Air Wing 16 presented an altar to the carrier *Oriskany* in memory of the men who had given their lives while serving aboard. The altar was presented at a memorial dedication ceremony on the hangar deck.

Earlier, the 77,000th trap aboard was made by Lt. Peter S. Ferrentino, USNR, in an A-1H *Skyraider*. He is a member of VA-165. A few days later. LCdr. Paul F. Selby recorded the 78,000th landing, in the same model plane from the same squadron.

RANGER (CVA-61)

Undergoing operational tune-up for this summer's WestPac deployment, *Ranger* has completed her six-month overhaul at San Francisco Naval Shipyard.

In addition to the work done on her, as described in the October 1963 edition of NANEWS, five complete, new arresting gear engine systems were installed. Van Zelm bridle arresting systems were incorporated into each of the carrier's four catapults. This system automatically retrieves the launching bridle, eliminating the need for men to climb onto the flight deck to retrieve it after every launching.

When the final additions and modifications are tallied up, *Ranger* will measure over 1070 feet in length, 270 feet in width and weigh approximately 60,000 light tons. With men, fuel, aircraft and supplies aboard, the gross displacement will range between 75,000 and 80,000 tons.

While *Ranger* was receiving new equipment and repairs, she was also receiving new men and training crew members in many areas. During the overhaul period, the carrier experienced a turnover of approximately 30 per cent in personnel. The ship's Education and Training Office sent over 1500 officers and men to various schools for training. The ship's complement is about 2500 officers and men.

CONSTELLATION (CVA-64)

The 20,000th landing on the *Constellation* since commissioning was logged by the ship's Executive Officer, Capt. Ray A. Volpi. Copiloting the C-1A *Trader* was Lt. Donald P. Smith.

HANCOCK (CVA-19)

Capt. Arthur J. Brassfield relieved Capt. Thomas D. Harris as Commanding Officer of the *Hancock* during an informal ceremony in Hangar Bay #2.

KITTY HAWK (CVA-63)

In a record three hours and 58 minutes, 20 pilots from VMFA-314 completed a refresher course on carrier landings aboard the *Kitty Hawk*. The course consisted of two arrested landings and two touch-and-go's. The Marines operate the F-4B *Phantom II*.

Another Air Force pilot has joined the *Centurions*. Exchange pilot Capt. Robert B. Adkisson, assigned to VA-113, landed in an A-4C *Skyhawk*.

PRINCETON (LPH-5)

Viewers of the TV hour-long show entitled "The Lieutenant" had a close-up look at life aboard an LPH recently. *Princeton* Navymen and Marines participated in an episode on vertical envelopment titled, "Green Water, Green Flag." They were seen in a General Quarters sequence, helicopter operations, and in troop loading scenes.

ATLANTIC FLEET

SHANGRI LA (CVA-38)

Some of the crew gawked: it was the most incredible case of channel fever they had ever seen. Before their eyes, just minutes after the *Shangri La* had anchored at Palma, Majorca, for a week's visit, the pilots of VF-62 began to jump overboard—literally!

A few reasoning moments later, though, it all made sense. The pilots

JUMPING SHIP *to test exposure suits, pilots aboard the Shangri La also practice cable lift recovery into a hovering H-25 Retriever. Most Carrier Air Wing Ten pilots aboard participated in the tests.*

were practicing helicopter rescue techniques and testing their rubberized survival suits. During the following week, most Carrier Air Wing Ten pilots participated in similar tests.

It was Ltjg. Richard Edwards of VF-13 who snagged *Shang's* 57,000th arrested landing. He made the record landing in a McDonnell F-3B *Demon*.

ENTERPRISE (CVAN-65)

In February, the *Enterprise* returned to the Med for her third deployment since commissioning in November 1961. She had already logged about 140,000 miles in the Caribbean, Med and Atlantic—without once refueling her nuclear reactors.

Aboard is CVW-6, composed of two fighter squadrons, one heavy attack squadron, four attack squadrons, a light photographic detachment, and two carrier AEW detachments.

SARATOGA (CVA-60)

Operation *Springboard* in the Caribbean was the setting as *Saratoga* recorded her 80,000th landing. Ltjg. S. T. Werlock of VA-34 made the landing in a Douglas A-4C *Skyhawk*.

FORRESTAL (CVA-59)

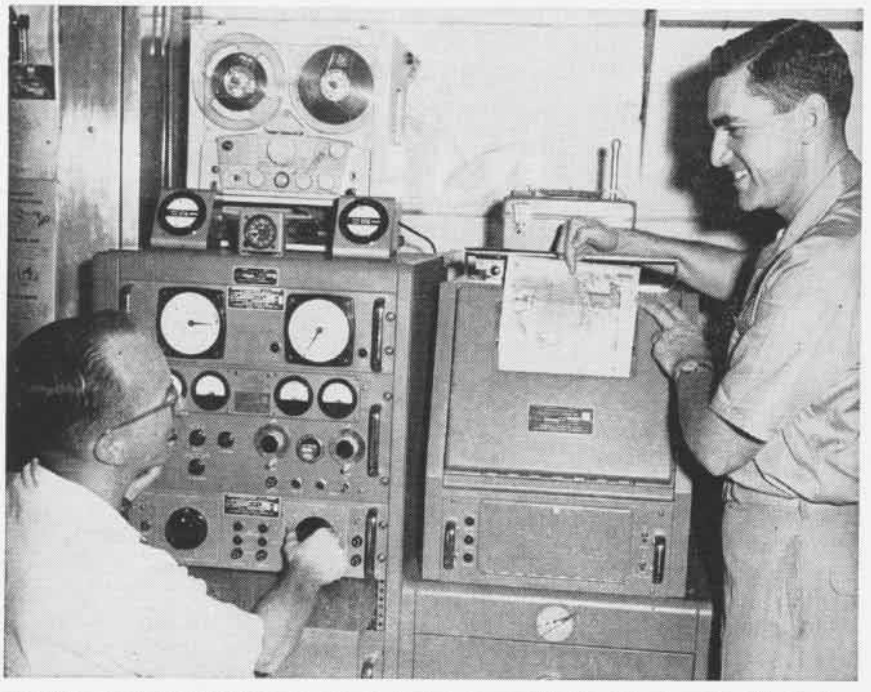
"It was a very emotional experience for me to see my son fly off and on the ship," said Mr. Charles L. Rousseau, president of Lucky Star Industries, Inc. "I have always wanted to fly. I was proud of him."

His son, Ltjg. Charles E. Rousseau of Cecil Field-based VA-44, was participating in a carrier qualification cruise in *Forrestal* while she operated off the southeastern coast of the U.S. Mr. Rousseau was invited aboard for the five-day cruise.

INDEPENDENCE (CVA-62)

LCdr. John Moore, Operations Officer for VAH-1, recorded the 59,000th landing aboard the *Independence*. His bombardier/navigator in the A-5A *Vigilante* was R. L. Williams, AE1.

While operating in the Med, *Independence* hosted the Secretary of State to the President of Tunisia, Bahi Ladgham, to observe day and night flight operations in the Sixth Fleet. RAdm. Allen M. Shinn, ComCarDiv Six, briefed the secretary and his party. Then they made a tour of the carrier.



RECEIVED FROM TIROS *VIII is a picture of cloud cover over Florida. It is viewed by W. C. Way, AG1, and Lt. V. J. Schuppert in Saratoga. CVA-60 is only floating receiving station for Tiros.*

Sanford A-3 Training Ends

Last Replacement Class Graduated

Heavy Attack Squadron Three recently graduated the last class of A-3B Replacement Pilots and Bombardier/Navigators. Those who received their diplomas from Capt. James Mayo, Commander of Heavy Attack Wing One, were Lieutenants J. E. Taylor, R. R. McCright, A. R. Skelly, and L. O. Connor, all pilots; and Ltjg. R. W. Fields, bombardier/navigator.

The graduation brought to a close VAH-3's *Skywarrior* replacement training which began June 15, 1956 when the unit was commissioned as the training squadron of Heavy Attack Wing One. In all, VAH-3 trained 325 pilots, 379 bombardiers and 304 third crewmen for the units of HATWing 1.

Phasing out the A-3B training mission of VAH-3 coincided with the expanded A-5 *Vigilante* training and the addition of many new and complex requirements in support of the RA-5C.

One Launch: Two Satellites

Boosted from Vandenberg AF Base

The Navy announced early in January that it had placed in orbit a pair of satellites with a single launch. One is nuclear powered; the other relies on solar energy.

The satellites were launched piggyback style from the Pacific Missile Range at Vandenberg AFB, California.

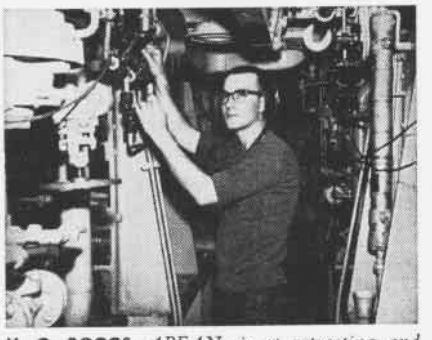
The 160-pound, nuclear-powered satellite, designed by the Applied Physics Laboratory of The Johns Hopkins University for BuWeps, makes use of waste heat from its SNAP-9A nuclear generator to keep its interior instrumentation at a temperature of approximately 70 degrees.

The solar-powered satellite launched with the nuclear one is a 120-pound octagonal experimental unit powered by solar cells mounted on four blades extending from the main body. It carries several radiation detectors, including small silicon detectors mounted on the satellite to detect protons and electrons coming from all directions.

As a result of experiments with transistors in the satellite, the Navy hopes to confirm environmental laboratory tests that indicate a solution to the problem of transistor damage which occurs as an effect of high altitude radiation. Six test transistors were placed in orbit on the satellite.

WHO HAS BEATEN 50,000?

J. D. WHITEFORD, *ABE1, G. W. Kingboch and C. H. Lowrey man Bonnie Dick's port console.*



H. G. BOGGS, *ABEAN, is at retracting and engine console as aircraft prepares to launch.*

C. W. MOTHERSHED, *ABEAN, gives the signal for port deck edge console for cat launch.*

WHO HAS beaten 50,000? This question is asked by the men of the USS *Bon Homme Richard's* safety-conscious catapult crew since the 50,000th successive accident-free catapult launch was chalked up on February 1. On that day, the catapult men invited Capt. G. S. Morrison, C.O. of the 43,000-ton carrier, to fire the milestone shot.

Bonnie Dick's V-2 Division has continued to rack up successful launches since May 2, 1957. On that date there occurred the only catapult launching accident since the reconversion of the big aircraft carrier back in 1956.

The two 18-man crews share the responsibility for safe launches. The catapult Chief Petty Officer, W. F. Whitaker, ABCS, attributes their success to "good maintenance and team training." J. D. Whiteford and R. L. Anderson, both First Class Aviation Boatswain Mates, are the port and starboard catapult captains respectively.

"Slingshot" officers, Lts. Lee Curry and Dean Ortmann, praise "the outstanding leadership of the petty officers, their ability to impart their knowledge to strikers and the fine spirit of teamwork in which each man willingly accepts his responsibilities."

With a possible record already established, Air Boss Cdr. Jim T. Cockrill wants the V-2 men to "make it 50,000 more." Since the big carrier is now with the Seventh Fleet on a seven-month deployment, the CAT men hope to log more successful launchings.

A FORMER FLIGHT *deck officer himself, Capt. Morrison, Bonnie Dick's skipper, donned a yellow shirt and green helmet to fire the milestone shot. He signals the blast-off to the Crusader piloted by LCdr. Bill Lott, officer-in-charge of Light Photographic Squadron 63, Det. Echo.*

THEY ARE GUARDIAN ANGELS TO BONNIE DICK AVIATORS

By Lawrence Bruce Lerner, JO3
Shipboard photos by R. L. Clodfelter, PH2

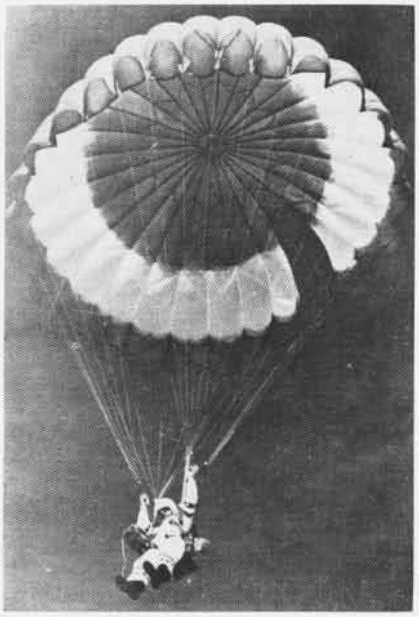
He didn't have to count them; he already knew there were about 500,000 stitches in the chute, each one evenly spaced, of strong fiber. He didn't have to measure them, the suspension lines; there were 1055 feet of them, each one lifting its share of the load. But the inspection had to be made, each stitch studied for a break, each foot handled, felt, inspected for a flaw. Were there any holes in the canopy? Any tears, however small, that might rip open in a sickening, gaping gash, spilling out air when the chute opened? Were there any chafed areas that would indicate a weakness? Was the canopy safe, the pack secure?

"Check the liferafts, Johnson. Give him a hand, Sellers."

Aaron Wooton, chief parachute rigger in the *Bon Homme Richard*, left the 40-foot long packing table and moved to the oxygen regulator test stand. E. J. Langill, PRAN, had just finished helping S. T. Sellers, PR2, separate shroud lines; he looked to the chief for instruction. Wooton nodded to the oxygen test stand and Langill followed.

"That time of the month again?" It was a new voice: W. T. Meadows, PRCS, of VA-192, entered the paraloft. E. G. Pannasch, PR1, grinned a greeting. He was assigned to VF-191. Meadows joined Wooton and Langill.

There were 85 parachutes in service aboard the *Bonnie Dick*. Wooton, in charge of the carrier's paraloft, supervised their maintenance and repair. He had six men assigned to help him, all ship's company. This staff is supplemented by additional riggers from Carrier Air Wing 19 deployed aboard. Based at NAS Lemoore are three attack squadrons in CVA-31: the *Golden Dragons* of VA-192, the *Dambusters* of VA-195, and the *Spadron 196-ers* of VA-196. From NAS Miramar are two fighter squadrons: the *Satan's Kittens* of VF-191 and the *Red Lightnings* of VF-194.



PANNASCH *makes 19,000th jump at El Centro before joining VF-191 and Bonnie Dick.*

"That time of the month" Meadows referred to was the periodic drying out and repacking of parachutes and the inspection of liferafts. Navy regs require each parachute be dried out for 24 hours every 60 days and repacked; liferafts must be inspected every 90 days. The periodic inspection of parachutes is necessary because the nylon fabric used in them is hygroscopic; that is, it gives off and absorbs moisture from the surrounding area. This is a particular problem at sea. To insure the best drying conditions, *Bonnie Dick* riggers no longer use the ship's drying loft when they are near a naval shore installation. It is faster, easier, less complicated when done ashore.

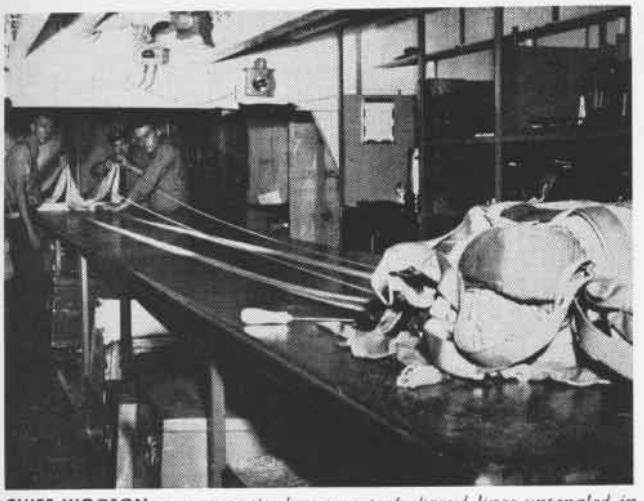
It is during the repacking process that the meticulous inspection is carried out. The five major parts of the parachute—the pilot chute which pulls the main 28-foot canopy out, the canopy, the suspension lines, the harness, and the pack—are all thoroughly checked for defects. A one-man raft and accompanying survival gear are packed into a seat parachute package weighing 72 pounds and measuring approximately 14x11x24 inches.

Special attention is given the ripcord assembly, the manual releasing device. In testing, a pull of not more than 22 pounds should release the pilot chute. The importance of the ripcord assembly operating perfectly cannot be overemphasized by Wooton and Meadows and the men they supervise: the parachutes used by *Bon Homme Richard* mailplane pilots (the C-1A *Trader*) and Spad pilots of the A-1H *Skyraider*, are not equipped with automatic actuator devices.

Automatic actuators are installed in *Bonnie Dick's* higher performance aircraft. They trigger the parachute at pre-set altitudes should the pilot fail to or be unable to work the manually-operated ripcord. The actuators are used when operating at extreme altitudes or speeds and are normally set to open the chute at 10,000 feet. This altitude is considered safe for deploying the canopy without damage to the parachute or physical danger to the parachutist due to opening shock force.

Pilots bailing out at extreme altitudes in the sub-zero rarefied atmosphere have been known to attain free-fall speeds in excess of 300 mph. Blackout at this speed is likely, but the actuator pilots may avoid prolonged exposure in the upper atmosphere by rapid free-fall to the warmer oxygen-present altitudes, and then have the chute deploy. Most of the carrier's air wing pilots have the self-actuating device built into their ejection seat systems.

The responsibilities of the parachute rigger rating encompass more than the



CHIEF WOOTON *supervises the laying out of shroud lines untangled in the Bon Homme Richard by S. T. Sellers, PR2, and E. J. Langill, PRAN.*

THE OXYGEN REGULATOR *test stand in the carrier's paraloft is demonstrated by Sellers for the benefit of apprentice G. A. Varnadore.*

title seems to imply. Put the question to Wooton and he can readily tick off a few of them. "In an average day, the rigger may be called upon to pack and equip a liferaft or repair and test oxygen regulators in the ship's altitude simulator. This chamber is capable of testing the gear's operating effectiveness at heights up to 50,000 feet.

"The PR may be asked to fit and maintain carbon dioxide and oxygen shop transfer and recharge equipment or inspect and repair anti-G suits, exposure suits and protective headgear."

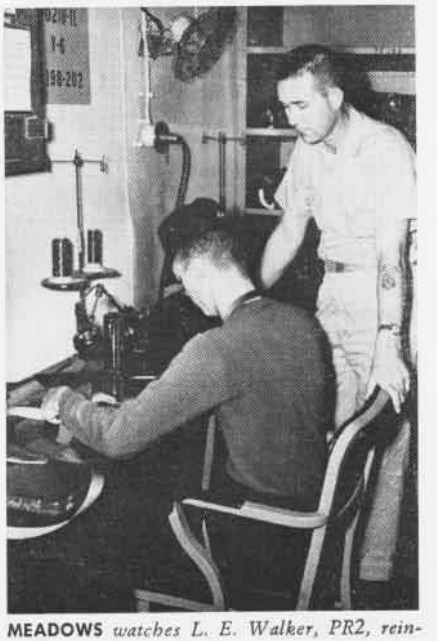
Many of the PR's in *Bonnie Dick* are men of long experience. Meadows, for instance, was formerly in charge of the Parachute Testing Division of the Naval Parachute Facility at El Centro, Calif. His job at that time was directly concerned with the design and construction of the parachute used in Cdr. Alan Shepard's sub-orbital flight during Project *Mercury*. Pannasch served at the Facility during Meadows' tour. He was in charge of the Parachute Fabrication Branch. At one time, he was also an alternate member of the Chuting Stars.

The PR's aboard the *Bonnie Dick* are dedicated. Most have—at least one time—packed their own chutes and jumped with them. This was required of the rate. The imperativeness of perfection is thus brought home to them. They have confidence.

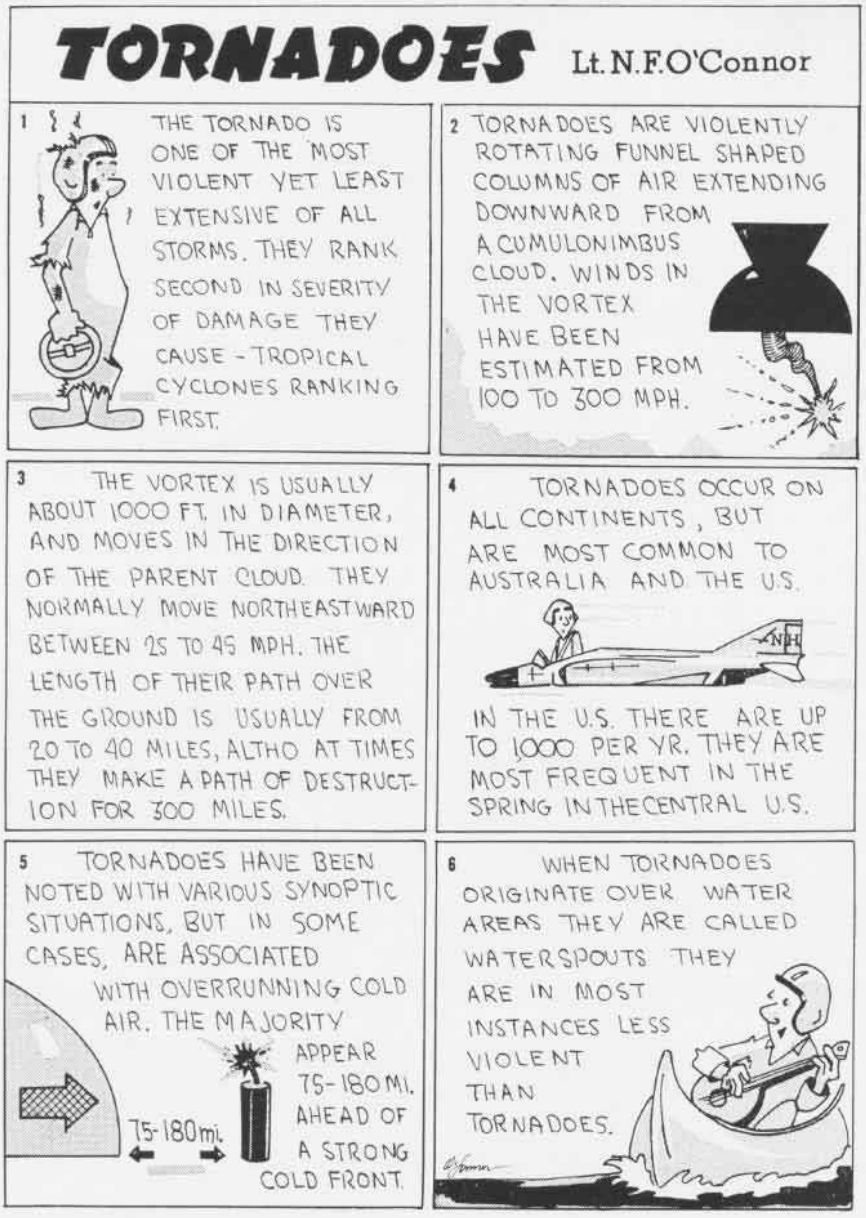
Not one is overconfident, though, as Wooton pointed out to striker Langill. "One man *could* pack this chute," he said, "but it's *never* done that way—no matter how experienced or qualified the rigger may be. Always *two* riggers. This double checking system insures the greatest possible degree of flawless assembly of the chutes."

Tired as the old joke may be, it is true: if the first chute doesn't work, there's no going back for seconds.

AVIATION SURVIVAL *equipment is checked by D. B. Johnson, PR2, and Sellers during periodic 90-day inspection of one-man survival liferafts and associated gear installed in CVA-31 aircraft.*



MEADOWS *watches L. E. Walker, PR2, reinforce stitching in the harness of a parachute.*



Last F-3 Demon Processed

North Island Program Began in '56

The final F-3 *Demon* completed Progressive Aircraft Rework (PAR) in the Overhaul and Repair Department at NAS North Island. Lt. C. R. Polfer, senior flight test officer, flew the aircraft and pronounced it ready for another service tour.

This ended a work program that began in October 1956 and included 439 reworks. The F-3 is being phased out as the supersonic F-4 *Phantom II* takes its place.

The *Demon* was a record-breaking new jet fighter when it was received at North Island over seven years ago. A month earlier, the single-engine aircraft had captured the McDonnell trophy with a non-stop, non-refueling flight from San Francisco to Oklahoma City at an average of 556.007 mph.

O&R employees remember one F-3 pilot rework aircraft for a special reason: it smelled like a winery when it came into the plant. The *Demon* had made a wheels-up landing in a vineyard in the San Joaquin Valley and was loaded with crushed grapes which were in a semi-fermented stage.

One of the most complex structural modifications ever attempted by an O&R was made to 120 of the F-3's. This was a structural change to the wing center section and fuselage carry-through area. It was designed to "beef up" the wing.

The F-4 which succeeds the F-3 as a first-line fighter is becoming an increasingly important work program at O&R North Island. There is a steady increase in F-4 workload planned in the quarters ahead.

O&R North Island will see the F-3's once more—briefly. As each one now in operation completes a service tour, it will return to the department to be prepared for storage.

Supply Unit Aids VT-5

Truck Now Stocks Airplane Parts

For want of a simple bolt or gasket, Training Squadron Five was forced to place aircraft at Barin Field in a "down" status until needed parts were shipped in from NAAS Saufley Field Supply, about 20 miles away. This maintenance delay was costly to both ground personnel and to the progress of training command students.

In an effort to solve the problem, Saufley supply officer, Ltjg. R. H. Robinson joined heads with the men of the supply division. "Why not get a Metro truck, put some bins inside, stock it with high utilization parts, and leave it at Barin during the week?" suggested Billy R. Churchwell, AK1. This idea was discussed, approved and put into action.

Ltjg. Robinson secured a truck from NAS Pensacola Transportation and the Public Works department built and installed parts bins. Meanwhile, David R. Gerloff, AK3, made a study to determine which parts were used the most by Barin's maintenance crews.

The truck went into operation in mid-November last year and has been an impressive success ever since. Each Monday morning it is driven from Saufley to Barin, well stocked with over 170 items ranging from nuts, bolts and gaskets to carburetors and generators. At the end of the working week the truck is returned to Saufley where an inventory is made on Saturday morning. It is then restocked and made ready for the next week.

Considering the results of the use of the supply truck, Ltjg. Robinson commented, "We know that aircraft availability has gone up, and the cost of picking up parts has been reduced."

Editor's Corner

ZIP Code in Minus Time. Ltjg. C. L. Duffee, of the USS *Hornet,* with the Seventh Fleet off the coast of Japan, received a letter from his wife, who is in Louisiana. The letter was postmarked January 9; he received it on January 6.

SAFETY MOTTO OF THE MONTH. In the Second Marine Aircraft Wing *Hot Dope Sheet*, the aviation safety officer printed the following, without comment:

"It is true that:

"Promptly promulgated, properly patented procedures proficiently performed preclude panic, prevent pulsating palpitations, paralyzing prolonged paranoia, positively preserve participating professional pilots' perpetually pampered posteriors perfectly."

Two Heads are Better. The same Marine ASO submitted the following comment appropriate to the March NANEWS controller-aviator feature (see page 13): "Obviously we can expect better service, and receive it, if there is a mutual understanding between controller and pilot. The old adage that 'two heads are better than one' is still valid and particularly when the two heads understand each other."

NO MORE BATHTUBS. In the January *NANews* Editor's Corner, a story was told of a bathtub lashed to an aircraft as a new "Fisheye" weapon. Now comes Capt. John M. Elliott, USMC, with a photo taken in 1922 of a Martin MT with a tub lashed on the torpedo rack, "Perhaps the first flying bathtub incident." The photo is from the collection of Mrs. Oscar L. George, Ontario, Calif. "There's nothin new. . . ."

"Naval Aviators must be Versatile." Hunting in his home state of Wyoming while on leave, Lt. Dan Derieg, of VT-2 at Whiting Field, Florida, went on temporary duty as a firefighter. Lt. Derieg and a forest ranger, working from 1:00 P.M. until late at night with pick and shovel, dug a firebreak area ahead of a fire that threatened to become a major forest disaster. For his part in the work, Lt. Derieg received a letter of commendation from the U. S. Department of Agriculture. Said the Naval Aviator, "Out there it is not a question of whether you will or won't fight a fire, but how."

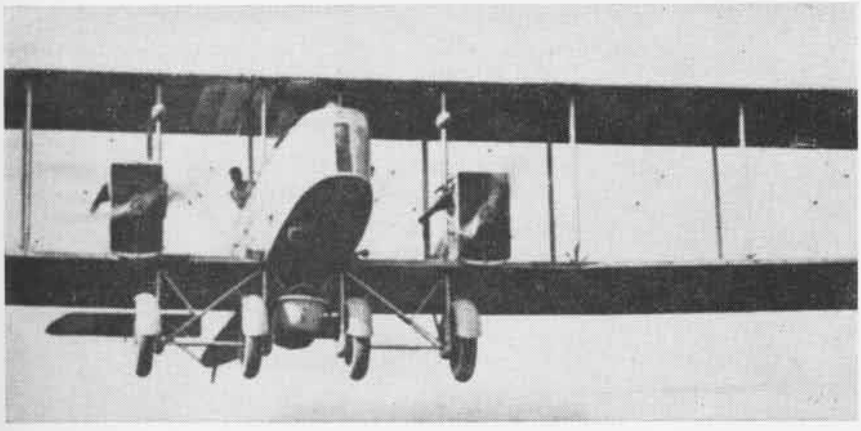
GREAT NEWS FOR LITTLE SHAVERS. According to a release from NASA, astronauts of tomorrow may be shaving during space flights with a newly patented razor. The device (by Shav-Air) is a vacuum-driven, turbine-powered razor which not only shaves the astronaut but also vacuums up weightless whiskers to prevent them from floating around in the spacecraft. NASA is evaluating the device to see if it can be adapted to space use.

Geography by Letter. Students in the sixth grade of the Bostonia School, El Cajon, Calif., have their own personal geography expert—a Navy chief travelling in the Pacific with the USS *Oriskany* (CVA-34). During the carrier's recent Far East cruise, Chief Dental Technician James F. McArthur kept the 31 students informed of his travels to Japan, the Philippines, Hong Kong and Hawaii. At each port of call, the chief wrote a descriptive letter telling the class about the people, their customs and his experiences with them. He also has answered more than 90 letters from individuals in the class. The class followed his trip on a wall map, tracing his path from start to finish. The chief took slides of his tour and is slated to report to the class in person as a follow-up to this unusual teaching method.

ONE MAN'S 'FAMILY'

DINING OUT TIP. Precautionary landings by helicopters are not an uncommon experience. Grampaw Pettibone keeps saying, "When in doubt, set 'er down!" So when it happened to a MAG-26 helicopter pilot recently near Tarboro, North Carolina, the on-site delivery of a maintenance crew, a new engine, and an expeditionary hoist, was routine. The engine change was accomplished in the middle of a tobacco field operated by Mrs. Adell Nichols and her three sons. What makes the story sound even more routine was that the pilot, upon his return, reported, "Mrs. Nichols makes the finest biscuits I have ever eaten."

Rigged for Stereophonic Sound. The USS *Kitty Hawk* is presenting Sunday stereo "concerts" while at sea, utilizing existing equipment aboard ship. The unusual arrangement is made possible by tuning in both the television and radio sets in each compartment, thus providing the two speakers necessary for stereo sound effects. One track is broadcast on the FM audio portion of the TV system, the other on standard radio receivers. ★★★



FIRST OF THE FLYING BATHTUBS?

LETTERS

More Kudos

SIR: May I add my congratulations to the many you have already received following the selection of *Naval Aviation News* as the Best Internal Periodical for 1963-64.

As a member of the Senate Armed Services Committee, I am especially pleased that the award went to a military publication. There is no substitute for good communications.

DANIEL K. INOUYE
United States Senator

Debate Goes On

SIR: May I add a bit of fuel to the "Flag" debate? When I joined Patrol Squadron Four, August 13, 1959, the squadron possessed its own flag.

I believe the flag was obtained when Cdr. P. A. M. "Pete" Griber (now Capt.) was C.O. of the squadron in 1958.

Perhaps Pete or the current VP-4 PIO can verify the date.

W. E. CONSTANCE, CDR.

A Chance to be Helpful

SIR: I am writing to seek your advice on a piece of historical research concerning the training of Royal Navy pilots by the U.S. Navy during the second World War. I write as a regular reader of your excellent magazine, an ex-RN cadet who was trained by your Service, and an aviation writer on the staff of "Flight International."

In my efforts to gather material for a major feature story on naval flying training, U. S. and British . . . I would like to contact men who were USN flying instructors at Bunker Hill and/or Corpus Christi during the 1943-45 period.

KENNETH OWEN

¶ Any instructors at Bunker Hill and/or Corpus Christi in the 1943-45 period may get in touch with Mr. Owen by writing to him care of "Flight International," Dorset House, Stamford Street, London SE1.

Information, Please

SIR: In the article on ham radio operators on ships (NANews, February 1964, page 36), there is this statement: "CNO encourages shore-based hams to contact maritime mobile stations by offering the Navy Maritime Mobile Certificate Award to all hams who contact five or more Naval ham stations."

As we contact many Naval vessels and run phone patches for them, we would like to apply for the award. Will you please tell us to whom we should direct our request.

DELORIS GLASSOCK, KORRO/4
Virginia Beach Amateur Radio Club

¶ Your request should be addressed to Chief of Naval Operations, Op. 945N, Navy Department, Washington, D.C.

Praise for Flags

SIR: I am a retired "old" Naval Aviator surrounded by many of the same in the business world. In our group at Bell Aerosystems Company, we really fight for the monthly copy of *Naval Aviation News,* which is tonic to the old bloodstream.

I've noticed for several months the problem of "who had the first squadron flag?" Well, I'm positive we didn't, but for the sake of beating the record in the February copy, I would like to throw in my 1957 (May) Carrier Air Task Group 182 flag, which still graces my present office. We in CATG-182 had flags for each squadron. As group commander, they were part of my office decorations and were flown at air group parade formations. Upon the decommissioning of the air group in 1958, each squadron C.O. was presented his own flag.

I heartily recommend the official recognition of unit flags. They are truly an element contributing to "esprit de corps."

A. G. "SLIM" RUSSELL
Director of Flight Research
Bell Aerosystems Company
Buffalo 5, New York

FIRST PHOTO *of Army's XV-5A lift-fan jet vertical takeoff and landing (V/STOL) aircraft shows it rolling out of the Ryan Aeronautical plant at San Diego, preparatory to shipment to Edwards AFB for flight test. It was built for the Army Transportation Research Command. General Electric developed the lift-fan propulsion system. The two-seat subsonic jet is said to be capable of flying from fields no larger than a tennis court and can "live" with the ground forces.*

VAH-2 Wins Three Awards

Squadron Honored at NAS Whidbey

Heavy Attack Squadron Two recently claimed a trio of awards in bombing proficiency during ceremonies held at NAS WHIDBEY ISLAND in February. Recognition was given to Ltjg. Harold King as top bombardier on the Pacific coast for 1963, while VAH-2 skipper Cdr. R. C. Small accepted the annual top bombing squadron trophy and the command's monthly bomber stream flag.

The presentations were made by Capt. D. G. Gumz, ComFAirWhidbey. The winning bomber stream crew included Cdr. E. E. Wood, Executive Officer of VAH-2, Ltjg. King, bombardier, and D. E. Bollig, ADR1, navigator. Their citations were given to each for his "professional attitude, assiduous pre-flight planning and exacting performance in winning this competition, [reflecting] the highest standards of performance required of Heavy Attack Squadron crews."

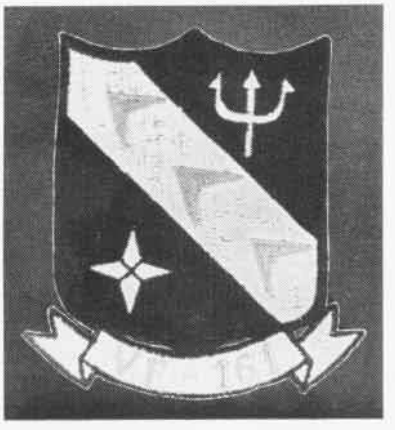
In addition, Ltjg. King was specifically cited for his excellent performance throughout 1963. A personal trophy and letter of congratulations was awarded for his victory in competition with bombardiers from all West Coast heavy attack squadrons.

The three-foot high trophy presented to Cdr. Small for over-all bombing proficiency has now been won twice in succession by the *Royal Rampants.*

In February, VAH-2 dominated the "totem poles" located outside the NAS WHIDBEY operations building. Seven out of the top ten Heavy Attack bombardier/navigators were *Royal Rampants,* and the poles for over-all bombing and safety were both recently topped by the squadron insignia.

SQUADRON INSIGNIA

Fighter Squadron 161 was commissioned in 1960 at Cecil Field and a year later assigned to ComNavAirPac. A unit of Attack Carrier Air Wing Sixteen, the 'Chargers' are based at NAS Miramar and fly the missile-equipped F-3B Demon. The squadron helped evaluate the Naval Tactical Data System on various WestPac deployments and is attached to USS Oriskany. C.O. is Commander Walter T. Broughton II.



NAVAL AVIATION

NEWS

WILL YOU SEE the sun today? Or will smog and skyscraper crags hide it? For a future above the crags . . . in the sun . . . physically qualified college men may apply for training as Naval Aviators and Observers. Write to

NAVCAD
Navy Department
Washington, D. C.